



OPTIMIZING WHITE HOUSE AND CABINET AGENCIES' ROLES In Implementing Federal Climate Change Initiatives

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Front Cover: The Ivanpah Solar Electric Generating System in California's Mojave Desert. Credit: US Department of Energy/Gilles Mingasson/Getty Images for Bechtel
Above: President Obama Meets with his Cabinet in the White House. Credit: Wikimedia Commons/Pete Souza

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INTRODUCTION

This paper summarizes the conclusions reached in a comprehensive Stanford Law School report¹ that reviewed the relative effectiveness of six climate change initiatives that required cross-governmental cooperation among the White House (and, in one case, a Governor's office) and multiple agencies. The paper (and the underlying report) confirm that White House has an important role to play in helping to coordinate and guide complex, multi-agency implementation challenges, and that it has succeeded in doing so in some cases. The paper also indicates, however, that the White House's tendency to create multiple White House-centric task forces and other, one-of-a-kind management structures with purported responsibility to oversee how governmental services are delivered has, in several cases, degraded clarity of mission and accountability, and led to sub-optimal results.

The paper concludes that the next President should devote more disciplined attention on how important Administration initiatives are structured to produce optimal results. When it comes to implementing climate change priorities that have been set by the White House, responsibility should rest primarily with cabinet agencies that have the budget, staff, expertise and jurisdiction to deliver on policy promises. For implementation, the White House role typically should focus on facilitating coordination among cabinet secretaries and, where appropriate, assisting them in developing common, cross-agency implementation programs and tools.

1 Mr. Hayes compiled and edited this report based on a submission completed by a Stanford Law School policy lab that he taught in the spring of 2015. The following students participated in drafting portions of the report on which this paper is based: Claudia Antonacci; Adam Bowling; Eeshan Chaturvedi; Siddharth Fresa; Heather Kryczka; Neil Raina; Caitlin Troyer; and Michelle Wu. The 106 page underlying report is available online at <https://law.stanford.edu/education/only-at-sls/law-policy-lab/practicums-2014-2015/energy-and-environmental-governance/106>

BACKGROUND AND SUMMARY

Over the years, successive White House administrations have taken a common approach when developing policy options in response to important issues like climate change. Typically, a senior White House lead is identified to drive policy development. The lead staffer then works in consultation with the relevant White House offices and cabinet agencies to identify and analyze policy options, solicit input on the options, and facilitate a decision-making process that pulls in the relevant cabinet and subcabinet officials through a series of “deputies” meetings (typically involving Deputy Secretaries for important policy decisions). The President then makes the final call and sets the policy direction for the Administration, in consultation with his or her top staff and relevant cabinet secretaries.

While the White House’s policy making process is well established, the broader apparatus of the federal government needs to be activated when it comes to implementing new policies. That is why, as a general matter, the White House should look to the cabinet agencies that have the budget, staff, expertise and jurisdiction to convert policy pronouncements into new, on-the-ground realities.

Unfortunately, these general rules of thumb can become blurred, especially for high-priority initiatives that require coordination among multiple agencies. Indeed, the White House’s propensity to assert overall responsibility for Administration priorities can erode the lines of authority and accountability when it comes to implementing new policies – even though the White House is poorly situated to “take charge of” how its policies are implemented by cabinet agencies.²

The Obama Administration’s climate change initiatives provide a good laboratory for evaluating the relative effectiveness of White House involvement in how agencies implement climate-related initiatives. Toward that end, a Stanford policy lab class evaluated six case studies that the federal government (and, in one instance, the State of California) has applied to facilitate interagency coordination in the climate change context. In each of these cases, the federal (or state) government and its customers sought operational results, not policy pronouncements. And in each of these cases, success largely turned on whether the interagency approach pursued by the agencies and/or the White House (or, in California’s case, the Governor’s Office) was itself well designed and well executed.

As illustrated in the six case studies summarized below, the executive branch frequently makes a number of serious mistakes when setting up initiatives that require coordinated execution across multiple agencies. In particular:

- Initiatives that blur the lines between policy-making and implementation are rarely effective from an implementation perspective. Some Executive Orders, for example, create White House-centric task forces that are well-positioned to gather information that might feed into a policy development process but that have diffuse organizational structures led by one or more White House offices that are ill-equipped to implement new directives across several agencies in a coordinated way.
- As a corollary, many processes that are styled as “interagency” in nature, and which are led by White House offices, generate a catalogue of agency-specific programs or initiatives that are rolled up into reports. Because they are not built with and around the leadership of the agencies that have to execute on new Administration-wide policy initiatives, these White House’s interagency efforts typically are not structured to take on the hard work of figuring out how to convert conflicting or incompatible agency programs into well-coordinated, cross-agency implementation efforts that will advance new, government-wide directives. This is unfortunate. The White House could play a valuable role if it were to focus on facilitating coordination cabinet secretaries and, where appropriate, assisting them in developing common, cross-agency implementation programs and tools. Remarkably little attention has been devoted to this important role.

2 See David J. Hayes, “The White House Needs to Learn When to Delegate,” *Washington Monthly* (July 15, 2015) http://www.washingtonmonthly.com/ten-miles-square/2015/07/the_white_house_needs_to_learn056594.php.

- White House-led implementation efforts also are typically disconnected from the budget process, despite the fact that budgetary augmentation often is needed to implement new Administration priorities. The failure of the Office of Management and Budget to prepare budget cross-cuts that review whether and how agency-specific implementation budgets match up also represents a missed opportunity to facilitate closer coordination among agency implementation efforts.
- Many initiatives are wrongly presumed to be first-of-a-kind undertakings that require new organizational structures, when workable, closely related existing structures may already exist.
 - Before deciding how to optimally structure a new implementation initiative, a disciplined review should be undertaken of how related tasks are currently being implemented by the relevant agencies.
 - If and when an affirmative decision is made to move in a new direction organizationally from the status quo, it is important to provide clarity on how the new structure will replace or otherwise relate to existing interagency task forces, MOUs, or other working arrangements.

The Stanford review of climate-related initiatives also identified key factors that are positive indicators of potential success for complex, multi-agency implementation efforts:

- Clear and unambiguous leadership and accountability to implement top line, White House-backed policy initiatives is an essential ingredient for success.
 - While the White House must play an important role in helping to facilitate implementation efforts, primary leadership and accountability to implement Administration priorities should typically be placed in the appropriate agency or agencies. Preferably, to avoid confusion and dilution of responsibility, only a single White House office should be identified as the White House lead.
 - Consideration should be given to designating cabinet official(s) and his or her staff(s) to lead, and have over-all accountability for, multi-agency implementation efforts, backed by the White House. Designation of this responsibility should be clearly and publicly articulated.
 - Decisions about the nature and scope of the implementation exercise, and the appropriate agency lead(s), need to be made collaboratively with the agencies that are most knowledgeable about, and will need to “own,” the implementation tasks.
- Inclusion of metrics and results-oriented reporting mechanisms in the Executive Order (or equivalent) directive will help clarify and underscore the purpose of the exercise and facilitate transparency and accountability. Initiatives that are focused on execution and on-the-ground results should embrace performance metrics and results-oriented reporting mechanisms. They should not be generating reports that simply catalogue individual agency programs.
 - Metrics should be developed in concert with the implementing agencies to enable truth-testing and to facilitate agency buy-in. In that regard, it is important to survey and take into account relevant existing agency programs, or interagency initiatives, when setting metrics and evaluating how to optimize agency participation in implementation efforts that cut across agency lines.
- As a practical matter, the effective implementation of White House initiatives often requires the active participation and support of regional and local federal officials from participating agencies. Accordingly, consideration should be given at the outset for how best to facilitate regional cooperation and buy-in.
- Implementation of high-level initiatives will almost always be improved if key stakeholders – such as state and local partners, tribes, and key interest groups – are asked to provide their input on how the feds might best approach the implementation challenge before the Administration finalizes its implementation strategy.

A final note on the important role of having the right people in place to guide complex agency implementation efforts:

- There is no question that the personal skills of the individuals involved in implementing complex governmental undertakings that cut across agency lines and that forthrightly address “turf” issues play a huge role in the success or failure of the endeavor. This is why appointments to high-level positions should take into account leadership skills, personal qualities, and experience. It also is true, however, that while having the right people involved in interagency efforts can sometimes overcome organizational dysfunction, complex interagency initiatives have a much higher likelihood of success when they are built on a sound institutional and organizational architecture.

ANALYSIS OF CLIMATE-RELATED CASE STUDIES

The Stanford review addressed the design and execution of interagency coordination efforts in six climate change contexts:

1. Responding to Climate Impacts on Natural Resources Managed by the Federal Government
2. Using Geographic Mapping Tools to Make Climate Change Impact Data Available Across Agencies and with Stakeholders
3. Federal Interagency Efforts to Address Climate Impacts to Critical Infrastructure
4. Reducing the Federal Government's Carbon Footprint
5. Implementing State-Wide Greenhouse Gas Reductions in California
6. Coordinating the Siting of Major Renewable Energy Projects on Public Lands

While it is hazardous to make general conclusions about the relative success of complex, on-going initiatives, the Stanford review found that the first three interagency climate change efforts that it examined were not well designed and, as a result, they have had mixed success. In contrast, the last three initiatives were better conceived, and executed, and have generated more success. Taken together, the case studies reinforce the observations made above regarding the importance of devoting more disciplined attention on how important Administration initiatives are structured to produce optimal results.

The discussion below summarizes key points that are more fully laid out in the Stanford policy lab's final report. As noted above, the complete 106 page underlying report is available online at <https://law.stanford.edu/education/only-at-sls/law-policy-lab/practicums-2014-2015/energy-and-environmental-governance/106>

1. Responding to Climate Impacts on Natural Resources Managed by the Federal Government

Climate change already is affecting our nation's natural resources due to warmer temperatures, shifts in participation patterns, rising sea levels, and more frequent and intense extreme weather events. Current and future impacts include droughts and wildfires; loss of snow cover and melting glaciers; flooding, erosion, and inundation of coastal areas; coral bleaching; insect infestations; and changes in habitats and species loss.³ Many of these impacts will have broad, negative consequences on a wide range of ecosystem services, including access to clean water and healthy forests and rangelands.

3 U.S. GOV'T ACCOUNTABILITY OFFICE, GAO-13-253, CLIMATE CHANGE: VARIOUS ADAPTATION EFFORTS ARE UNDER WAY AT KEY NATURAL RESOURCES MANAGEMENT AGENCIES 7-8 (2013), available online at <http://www.gao.gov/assets/660/654991.pdf>.

The federal government has a major role in addressing climate change-related impacts on our natural resources because it has direct stewardship responsibility over a major proportion of our natural resources. By way of example, the federal government has direct responsibility for managing more than 700 million acres of land—or about 30 percent of the nation’s total acreage—along with offshore marine resources.⁴ These responsibilities implicate water supplies, coastal resources, threatened and endangered wildlife, and fishery and marine resources in offshore waters. The federal government is also in a unique position to assist state and private natural resource managers in addressing climate impacts by sharing information about the nature and scope of expected impacts on resources and potential response strategies.

Because the federal government’s wide-ranging resource management responsibilities are divided among a number of agencies, there is a premium on developing effective interagency coordination mechanisms and common, cross-agency implementation programs and tools to address climate impacts efficiently and effectively.

During the first term of the Obama Administration, a White House-led Climate Change Adaptation Task Force was the primary interagency effort utilized to address climate impacts on natural resources. It triggered an offshoot interagency effort focused on addressing freshwater resources. Two other resource-specific interagency efforts also moved forward in the first term, including the White House-led National Oceans Council and the Congress-directed National Fish, Wildlife and Plants Climate Adaptation Strategy. After the President issued his Climate Action Plan in June 2013, the Administration decided to “reboot” its interagency climate adaptation activities in the second term, leading to the issuance of a 2014 report entitled *Priority Agenda: Enhancing the Climate Resilience of America’s Natural Resources*.

Key lessons from the first term’s climate change adaptation efforts include:

- The Climate Change Adaptation Task Force was staffed by the White House’s Council on Environmental Quality (CEQ). It focused on developing general, high-level policy approaches to adaptation; it did not seriously address implementation issues raised by the multiple federal agencies that were confronting common climate impact issues affecting shared natural resources.
 - By failing to engage the leadership of the natural resource agencies in a focused coordination effort, the Task Force stood by as virtually all of the federal natural resource agencies developed their own stove-piped adaptation and resilience programs. This unfortunate situation recently prompted the Advisory Committee on Climate Change and Natural Resource Science to observe that “the rapid development of these [natural resource agency climate change] programs, and the ever-expanding list of potential partners in these endeavors, suggests a pressing need for significant investments in coordination.”⁵
- The three resource-specific interagency efforts touching on climate change also had limited effectiveness, for a variety of reasons:
 - Two agencies with a major stake in freshwater issues—the Department of Interior and EPA—took the lead in developing an interagency approach to addressing climate impacts on freshwater resources. Because the project was being led by two agencies with significant expertise and experience, the freshwater interagency workgroup focused on implementation issues and identified a series of practical deliverables and outcomes. Unfortunately, however, because the workgroup was a subset of the White House-led Climate Change Task Force, it did not receive top-level budget or implementation attention from the White House or the Departments.
 - The National Ocean Council (NOC) is a White House-led interagency effort that focuses on climate change and other impacts on oceans. Most observers commented that the NOC effort has been disappointing. Key concerns have been the sprawling and somewhat disorganized nature of the effort, with the relatively weak White House engagement loosely overseeing more than twenty-five agencies and offices that had widely varying levels of commitment to the effort. Without strong leadership in

4 *Id.* at 2.

5 COUNCIL ON CLIMATE PREPAREDNESS AND RESILIENCE CLIMATE AND NATURAL RESOURCES WORKING GROUP, PRIORITY AGENDA: ENHANCING THE CLIMATE RESILIENCE OF AMERICA’S NATURAL RESOURCES (2014) [hereinafter PRIORITY AGENDA], available online at https://www.whitehouse.gov/sites/default/files/docs/enhancing_climate_resilience_of_americas_natural_resources.pdf.

the White House or at top levels of the key agencies, the exercise produced lengthy documents that tended to chronicle what individual agencies were doing and did not tackle difficult interagency overlap and implementation issues.

- The National Fish, Wildlife and Plants Climate Adaptation Strategy, like the freshwater interagency initiative, was largely driven by the key federal wildlife agencies (e.g., the U.S. Fish & Wildlife Service) and by companion state agencies. The White House only had nominal involvement in the initiative. The primary focus of the exercise was policy development and the participants were largely pleased with the results. A coordinating body has been established to help with implementation, but the effort is proceeding at a lower level, and without significant funding support.
- The Administration's more recent efforts over the past two years to adopt a new framework for better interagency cooperation in the area of climate impacts on natural resources holds more promise for successful integration of cross-agency efforts. The framework builds on existing agency priorities, draws input from a Task Force of state, local and tribal stakeholders, and is a clear Presidential priority—features that position it well for success. Of special note is the fact that an agency-led Climate and Natural Resources Working Group has been set up under E.O. 13653. By entrusting the agencies to take ownership of the issues, a much more ambitious avenue for interagency action has emerged in the report that the interagency agency working group released in October 2014.

2. Using Geographic Mapping Tools to Make Climate Change Impact Data Available Across Agencies and with Stakeholders

The federal government is taking a number of steps to better manage the resources for which it is directly responsible in the face of climate change. While careful stewardship of federally managed natural resources is important in its own right, the federal government also is uniquely positioned to assist local and state authorities who are attempting to understand and deal with climate impacts on properties and infrastructure for which they are responsible. Those impacts already are affecting many key sectors, including vulnerable coastal infrastructure and regional water supplies and a variety of land uses, ranging from our coasts, floodplains, forests, farms and wildlife.⁶ As a result, state, regional and local officials are particularly eager to access authoritative information about impacts so that they can respond by developing sensible adaptation and resilience strategies.⁷

The federal government currently has available data that are potentially valuable for state and local decision makers, and it is developing new tools to help land and water managers make good decisions. In particular, a number of federal agencies have developed sophisticated maps that are populated by robust data sets compiled and curated by government scientists, which can provide a visual window into how climate change–related impacts are affecting local resources. Google Maps™ and other private services have popularized these GIS (Geospatial Information System) tools for every-day use. When it comes to depicting climate impacts on infrastructure and resources, however, GIS mapping services need to draw upon reliable and constantly updated scientific data sets that can be “mashed together” on GIS-based maps.

Coordinating the collection of diverse data sets in a common format and developing standards and protocols to ensure their integrity presents a classic case example in which interagency coordination and cooperation is needed.

6 U.S. Fish & Wildlife Service. *Rising to the Urgent Challenge: Strategic Plan for Responding to Accelerating Climate Change*. (Nov. 2012) at 7, available online at <http://www.fws.gov/home/climatechange/pdf/CCStrategicPlan.pdf>. USDA Forest Service. *USDA Forest Service Climate Adaptation Plan*. (2014) at 61, available online at http://www.usda.gov/oce/climate_change/adaptation/Forest_Service.pdf.

7 *Priority Agenda: Enhancing the Climate Resilience of America's Natural Resources*. Council on Climate Preparedness and Resilience (Oct. 2014) at 4. See generally, ESRI, *GIS for Federal Government: Building a National GIS Community*. (available online at <http://www.esri.com/library/brochures/pdfs/federalbro.pdf>)

The Federal Geographic Data Committee (FGDC) has been utilized since 1990 as the interagency coordination mechanism to develop common standards and protocols for GIS-based data and mapping products. In the last two years, in connection with the President's Climate Action Plan, the Administration has initiated a new effort to provide easier access to GIS-based data and mapping services through its "Climate Data Initiative" and the development of a related "Climate Resilience Toolkit."

Lessons learned from the FGDC's longstanding interagency efforts, and the Obama Administration's more recent climate-related data initiatives, provide insights into the ingredients of successful interagency coordination initiatives. Key takeaways include:

- Despite operating relatively well, the great acceleration in technology and data is beginning to overwhelm the lower-level and low-key FGDC interagency effort. The new demand for GIS mapping services, fueled by the need for climate impact information and other landscape-level informational needs, has triggered largely uncoordinated, agency-by-agency investments in IT and mapping software and services—leading to large expenditures and a poor user experience, as users typically must search for relevant data inefficiently, often on an agency-by-agency basis.
- Because the FGDC governance structure relies on volunteer help from the relevant agencies and does not have a history of commanding buy-in from cabinet and White House office leaders, the FGDC does not appear to have the institutional heft to force more interagency coordination in providing GIS data and mapping services.
- The Administration's Climate Data Initiative and Resilience Toolkit are intended to provide centralized, easy access to key GIS mapping tools, but the Administration has not identified a governance structure that will accomplish that difficult interagency coordination task.
 - Current participants in the effort describe the Climate Data Initiative as being run by a "coalition of the willing." Turnover among key volunteers could significantly set back progress on the initiative.
 - The Administration has not explained how its new climate data initiative—which is being loosely overseen by the Council on Climate Preparedness and Resilience—relates to the long-established, interagency Federal Geographic Data Committee. Disconnected interagency efforts around closely aligned issues create confusion and weaken the effectiveness of interagency efforts.
- Experts indicate that the federal government's push to develop more customer-friendly access to helpful, climate-related, GIS-based data and mapping tools through *Geoplatform.gov* and *Data.gov* (enhanced by the Climate Data Initiative and the Resilience Toolkit) will likely require full-time database management staff, operating with state-of-the-art software and IT tools. This points to the need to put a shared services model in place. To do so will require a strong interagency governance structure that will marry ongoing, agency-specific data generation and curation activities with a government-wide center of excellence that will use modern IT tools, and a dedicated staff, to provide efficient access to useful data and analysis. Neither the FGDC nor the more recent Administration climate data initiative have the type of strong interagency governance structure necessary to address this requirement.

3. Federal Interagency Efforts to Address Climate Impacts to Critical Infrastructure

The Stanford study includes a full discussion of the shortcomings of each of the five initiatives that have been launched in recent years to address climate change adaptation and resilience issues as they affect our nation's infrastructure. As discussed in the report, the key takeaways associated with each initiative include:

Federal Task Force. The first initiative was launched in 2009 under Executive Order 13514, "Federal Leadership in Environmental and Energy Performance," which directed the Interagency Climate Task Force to recommend ways that federal policies and programs could better prepare the Nation for the impacts of climate change. This effort was one of the first concerted interagency attempts to focus on and develop a coordinated policy around climate change impacts.

The Task Force issued reports in 2010 and 2011. As discussed in the Stanford study, the 2010 report identified policy approaches that might guide adaptation efforts.⁸ The follow-on 2011 report engaged in a cataloging exercise of agency-specific efforts.⁹ It exhibited minimal meaningful agency coordination across mission spaces. The catalog of agency initiatives demonstrates that in the absence of a clear implementation guidance or structure for cross-agency coordination, agencies defaulted to a siloed approach.

Infrastructure Resilience Working Group. The second, related initiative was launched in 2013, with the issuance of a follow-on Executive Order 13653, “Preparing the United States for the Impacts of Climate Change.” The new Executive Order replaced the Climate Change Adaptation Task Force with the Council on Climate Preparedness and Resilience, one component of which is the Infrastructure Resilience working group. The Department of Homeland Security (Office of Infrastructure Protection) and the Department of Energy chair the working group.

While it is too early to tell precisely how this effort will unfold, the current emphasis by the Council and working group appears to be on sharing information, rather than seeking to reduce the proliferation of agency-based efforts. For example, although the group aims to “forge new interagency partnerships where appropriate,” neither the Council nor the working group have identified a specific mechanism for addressing jurisdictional overlaps. In its Climate Change Adaptation Plan, for example, the Department of Energy (DOE) states that, through its participation in the Council on Climate Preparedness and Resilience and other interagency working groups, it will share “best practices” with other federal departments and agencies. There appears to be little effort to develop consistent implementation approaches across agencies.

Infrastructure Resilience Guidelines. A third initiative grew out of the Hurricane Sandy disaster. In December 2012, President Obama signed an Executive Order establishing the Hurricane Sandy Rebuilding Task Force to lead the long-term rebuilding effort in the region, while ensuring that rebuilt structures and systems were more resilient to current and future risks, particularly from climate change impacts. The President designated the Secretary of Housing and Urban Development, Shaun Donovan, as the Task Force chair. Secretary Donovan and the Task Force were charged with working across the Administration, and closely with the affected states and local jurisdictions, to identify and work to remove obstacles to resilient rebuilding in a manner that addressed current and future risks and promoted the long-term sustainability of communities and ecosystems in the affected region. The President directed the Task Force to deliver a rebuilding strategy within six months of the Executive Order.

In August 2013, the Task Force released the Hurricane Sandy Rebuilding Strategy, which established a set of guidelines for investing the appropriated funds to ensure, among other things, that the region was rebuilt with better resiliency to future risks, including climate change.¹⁰ As a key part of its work, the Task Force developed new “Infrastructure Resilience Guidelines.” The guidelines focused on the disaster at hand and developed a single, central set of guidelines that were used by all agencies in distributing Sandy recovery funds. The Task Force also recommended the guidelines be applied in a whole-of-government manner nationally, and beyond disaster recovery.

To implement the goal of broadening the applicability of infrastructure resilience guidelines beyond the Hurricane Sandy context, the Department of Homeland Security’s National Protection and Programs Directorate, with support from White House National Security Staff, initiated an interagency process to assess the value and feasibility of expanding the guidelines’ use. This effort was led by an independent evaluation of the guidelines’ implementation by the RAND Corporation.

8 INTERAGENCY CLIMATE CHANGE ADAPTATION TASK FORCE, PROGRESS REPORT OF THE INTERAGENCY CLIMATE CHANGE ADAPTATION TASK FORCE: RECOMMENDED ACTIONS IN SUPPORT OF A NATIONAL CLIMATE CHANGE ADAPTATION STRATEGY 4 (2010), available online at <https://www.whitehouse.gov/sites/default/files/microsites/ceq/Interagency-Climate-Change-Adaptation-Progress-Report.pdf>.

9 INTERAGENCY CLIMATE CHANGE ADAPTATION TASK FORCE, FEDERAL ACTIONS FOR A CLIMATE RESILIENT NATION: PROGRESS REPORT OF THE INTERAGENCY CLIMATE CHANGE ADAPTATION TASK FORCE 6 (2011), available online at https://www.whitehouse.gov/sites/default/files/microsites/ceq/2011_adaptation_progress_report.pdf.

10 HURRICANE SANDY REBUILDING TASK FORCE, HURRICANE SANDY REBUILDING STRATEGY 14 (2013) [hereinafter SANDY 2013], available online at <http://portal.hud.gov/hudportal/documents/huddoc?id=hsrebuildingstrategy.pdf>.

The RAND report confirmed that the development of infrastructure guidelines in the context of the Hurricane Sandy recovery effort was a positive step that reinforced the importance of developing common adaptation and resilience approaches across the government. The RAND report noted, however, that at least six federal initiatives had encouraged adoption of an integrated interagency approach to resilience principles in the years leading up to and following Sandy. The proliferation of initiatives had reinforced the importance of issue but, in the absence strong, consistent and coordinated leadership by White House and cabinet secretaries, agencies were continuing to develop their own ways of addressing infrastructure adaptation and resilience needs.

The National Infrastructure Protection Plan. The fourth initiative involves the development of the “National Infrastructure Protection Plan.” The NIPP has been developed under the Homeland Security Act of 2002, which directed the Department of Homeland Security (DHS) to develop a comprehensive plan for ensuring the security of the Nation’s critical infrastructure. In response to this directive, DHS released the first National Infrastructure Protection Plan (NIPP) in 2006. The Department updated the plan in 2009. In 2013, President Obama issued Presidential Policy Directive 21 (PPD-21), Critical Infrastructure Security and Resilience, which directed DHS to update the NIPP once again.¹¹ PPD-21 directed DHS to update the NIPP in coordination with Sector Specific Agencies; other relevant Federal departments and agencies; state, local, tribal, and territorial entities; and critical infrastructure owners and operators.

In December 2013, DHS released the latest update to the NIPP, which is intended to guide the national effort to manage risk to the nation’s critical infrastructure, in conjunction with national preparedness policy.¹² The NIPP 2013 was developed through a process that included private sector entities, State and local governments, Federal departments and agencies, non-governmental organizations, and academia.

The NIPP envisions “[a] Nation in which physical and cyber critical infrastructure remain secure and resilient, with vulnerabilities reduced, consequences minimized, threats identified and disrupted, and response and recovery hastened.” According to the Department, the NIPP provides the structure for integrating the critical infrastructure security and resilience initiatives into a coordinated effort across all stakeholders (including federal departments and agencies). As such, the NIPP is intended to provide a central policy to guide efforts related to infrastructure security and resilience across federal departments and agencies.

To implement this policy, the NIPP established a coordinating structure. It has organized critical infrastructure into 16 sectors and designated a federal department or agency as the lead for each sector. These lead agencies are referred to as sector-specific agencies. In addition to the sector-specific agencies, the NIPP identified two primary federal components of the partnership structure as follows:

- Federal Senior Leadership Council (FSLC): includes officials from each sector-specific agency and other Federal departments and agencies with a role in critical infrastructure security and resilience.
- Government Coordinating Councils (GCCs): includes representatives from various levels of government to enable “interagency, intergovernmental, and cross-jurisdictional coordination within and across sectors and partner with SCCs on public-private efforts.”

The NIPP development experience demonstrates that neither FSLC nor any other federal body is effectively serving this purpose. For example, the NIPP includes a “Supplemental Tool: Incorporating Resilience into Critical Infrastructure Projects,” which recommends steps decision makers can take to promote resilience in infrastructure projects. This list is more comprehensive than the Infrastructure Resilience Guidelines that emerged from the Hurricane Sandy process, but it overlaps with the guidelines in many ways, serving as yet another redundant and confusing set of guidelines regarding infrastructure resilience.

11 Presidential Directive on Critical Infrastructure Security and Resilience; DCPD-201300092 (2013).

12 U.S. DEPARTMENT OF HOMELAND SEC., NIPP 2013: PARTNERING FOR CRITICAL INFRASTRUCTURE SECURITY AND RESILIENCE 8 (2013) [hereinafter NIPP], available online at http://www.dhs.gov/sites/default/files/publications/NIPP%202013_Partnering%20for%20Critical%20Infrastructure%20Security%20and%20Resilience_508_0.pdf.

One method for achieving a more streamlined approach would be to ensure that all departments and agencies consistently apply the NIPP framework and principles. Unfortunately, it seems that DHS is not currently well positioned to effectively lead this effort. The Government Accountability Office (GAO) released a report in September 2014 regarding interagency coordination of infrastructure vulnerability assessment efforts. It candidly stated that “DHS is not positioned to manage an integrated and coordinated government-wide approach for assessments as called for in the NIPP because it does not have sufficient information about the assessment tools and methods conducted or offered by federal entities external to DHS with [critical infrastructure] responsibilities.”¹³

The GAO recommended that DHS explore the viability of using a single assessment methodology to consolidate its assessment tools and methods with those of other agencies. This recommendation is consistent with that made in the RAND report, which called for the streamlining of federal approaches to infrastructure resilience.

With its articulated interagency structure, the FSLC could lead this effort. However, it is unclear whether the FSLC, as currently structured, will be able to drive effective change. The DHS Office of Infrastructure Protection leads the FSLC and NIPP implementation efforts, which are purely interagency initiatives without White House oversight. The Office is a third tier DHS subcomponent, which, without significant attention from the DHS Secretary — much less the White House — may not have the political stature to effectively push for toward a comprehensive, cross-agency, streamlined federal approach to infrastructure resilience.

Furthermore, in the past, DHS has not had the same expertise in the climate change arena enjoyed by agencies such as EPA and NOAA. This likely undercuts its credibility among other departments and agencies, and decreases its ability to effectively lead the effort. Finally, while the FSLC charter calls for executive-level agency participants, anecdotal evidence suggests that current participants do not have the necessary decision-making authority within their own agencies to effectively push for change. Thus, while the FSLC may be senior-level interagency coordinating structure on paper, cooperation across peer agencies is unlikely to materialize without any White House involvement or authority.

Thus, as it now stands, the NIPP and its Supplemental Tools appear to be yet another “interagency” infrastructure resilience effort that overlaps with other federal initiatives in the same space.

Federal Resource Guide for Infrastructure Planning and Design. In recognition of the fact that it is most effective to build in climate change resilience principles during the early design phases of a project, President Obama issued a Presidential Memorandum in January 2015 entitled “Expanding Federal Support for Predevelopment Activities for Nonfederal Domestic Infrastructure Assets” as a complement to his Build America Investment Initiative, which had been launched in July 2014.¹⁴ The January 2015 Presidential Memoranda called on the Departments of Agriculture, Commerce, Labor, Housing and Urban Development, Transportation, Energy, and Homeland Security, and the Environmental Protection Agency to educate grantees and the public on the benefits of predevelopment and on Federal resources available to support pre-development activities.¹⁵

In May 2015, this interagency group released the Federal Resource Guide for Infrastructure Planning and Design (the Guide). The Guide adds to the already confusing array of uncoordinated infrastructure resilience guidance provided by the federal government. The predevelopment principles articulated in the Guide overlap significantly with the Hurricane Sandy Infrastructure Resilience Guidelines, as well as those articulated in the NIPP Supplemental Tool discussed above. Yet, neither of these resources is mentioned in the Guide. As such, it appears to represent a missed opportunity to add clarity to the current patchwork of agency-by-agency efforts.

13 U.S. GOV'T ACCOUNTABILITY OFFICE. GAO-14-506, DHS ACTION NEEDED TO ENHANCE INTEGRATION AND COORDINATION OF VULNERABILITY ASSESSMENT EFFORTS 37 (2014), available online at <http://www.gao.gov/products/GAO-14-507>.

14 BUILD AMERICA INVESTMENT INITIATIVE INTERAGENCY WORKING GROUP, RECOMMENDATIONS OF THE BUILD AMERICA INVESTMENT INITIATIVE INTERAGENCY WORKING GROUP 7 (2015) available at <http://www.treasury.gov/resource-center/economic-policy/Documents/Build%20America%20Recommendation%20Report%201-15-15%20FOR%20PUBLICATION.pdf>.

15 Presidential Memorandum on Expanding Federal Support for Predevelopment Activities for Nonfederal Domestic Infrastructure Assets; DCPD-201500034 (2015).

The participating departments and agencies do not bear the full blame for this duplicative effort. The Guide is directly responsive to the Presidential Memorandum, which called on the group to provide best practices in the area of infrastructure predevelopment. As the RAND analysis suggested above, an excess of White House mandates on a particular subject can aggravate already superfluous and incongruent agency efforts. These mandates can trigger reactive agency attempts to fulfill presidential requirements on paper, without taking broader stock to the larger landscape of an issue. If departments and agencies are going to move beyond reactive, ad hoc, and siloed approaches, rather than ask for new reports, the White House should clearly require, and assist, departments and agencies in detangling, consolidating, and streamlining current guidance and efforts.

4. Reducing the Federal Government's Carbon Footprint

Early in his first term, President Obama challenged the federal government to “lead by example” by issuing Executive Order 13514 and establishing sustainability performance goals and an annual reporting framework for the federal government.¹⁶ The initiative is significant, given that the federal government is the single largest energy consumer in the United States¹⁷—it occupies approximately 500,000 buildings, operates more than 600,000 vehicles, and purchases more than \$500 billion of goods and services each year.¹⁸

Five and one-half years later, on March 19, 2015, President Obama took the unusual step of issuing revised and updated federal sustainability goals—and the mechanisms adopted to attain those goals—by signing Executive Order 13693.¹⁹ The new executive order incorporated management lessons learned from the initial implementation efforts of E.O. 13514, including a recognition of the need to fully engage agencies in implementation efforts.

The interagency process put in place by the President to oversee efforts to reduce the federal government's carbon footprint (and achieve other sustainability goals) has worked quite well. It arguably represents the most successful of the interagency efforts reviewed in this report. The key drivers for this successful interagency process include the following points:

This interagency process was focused, from the start, on the *implementation* of a climate change policy directive, in the form of executive orders, to reduce the federal government's carbon footprint (and achieve other sustainability objectives). This contrasts with many interagency efforts that involve the development of a unified *policy* approach for the federal government. While the White House is the natural lead when it comes to developing government-wide policy prescriptions, interagency efforts that focus on how best to implement or operationalize policy directions must defer to, and rely heavily on, agency leadership and expertise to be successful. These executive orders have largely achieved this important balance, as demonstrated by the following characteristics:

- Agencies were actively involved in drafting and reviewing the executive orders. As a result, there was agency buy-in for the metrics and processes established under the executive orders.
- Agency-led working groups established under the executive orders developed guidelines and best practices for groups of agencies that had similar operational characteristics.

16 *Federal Leadership in Environmental, Energy, and Economic Performance*, Exec. Order No. 13514, 74 Fed. Reg. 52,117 (Oct. 5, 2009) [hereinafter Exec. Order 13514].

17 *Cutting the Federal Government's Energy Bill: An Examination of the Sustainable Federal Government Executive Order: Hearing Before the Fed. Fin. Mgmt., Gov't Info., Fed. Servs., & Int'l Sec. Subcomm. of the S. Comm. on Homeland Sec. and Governmental Affairs*, 111th Cong. 5 (2010) (statement of Nancy Sutley, Chair, Council on Env'tl. Quality).

18 *Id.*

19 *Planning for Federal Sustainability in the Next Decade*, Exec. Order No. 13693, 80 Fed. Reg. 15,871 (Mar. 19, 2015) [hereinafter Exec. Order No. 13693].

- The executive orders' heavy reliance on agency experts to develop guidance that satisfies high-level goals set by the White House reflects a mature organizational approach that acknowledges the limitations of White House policy staff in establishing practical, workable guidelines for meeting sustainability goals.
- The two executive orders' recognition that significant interagency coordination needs to occur at the regional level illustrates the orders' practical emphasis on implementation. Not surprisingly, enhancing regional cooperation has been one of the biggest challenges under the orders; additional mechanisms may be needed to make more progress in this area.

The policy goals that drove the interagency process were clearly defined and provided metrics upon which agencies' operational success could be measured:

- The agencies were required to produce Strategic Sustainability Performance Plans and report on their results.
- The executive orders included reporting mechanisms that provided performance incentives.

Performance was taken into account during internal budget reviews with OMB; supplemental funds were provided for project investments that yielded proven results.

Agency performance results were made available to the public, in support of the President's commitment to transparency and open government.

5. Implementing State-Wide Greenhouse Gas Reductions

California has long been at the forefront of climate change policy innovation. Starting in the late 1990's, California's political leadership, backed by strong public support, responded to the global threat of climate change. The California Legislature's passage of AB1493 in 2002²⁰—the first legislation in the world to regulate greenhouse gas emissions from passenger vehicles—was an early example of the state's commitment to addressing climate change.²¹ Governor Arnold Schwarzenegger and the California legislature followed up in 2006 with enactment of one of the most comprehensive climate change statutes ever passed, the Global Warming Solutions Act—commonly known as AB32.²² Governor Jerry Brown has continued in this tradition by setting ever-higher targets for GHG emissions reductions and clean energy generation in the state.

While these laws provide the statutory framework for addressing greenhouse gas emissions in California, implementation of their complex requirements falls on the administrative agencies of state government, led by the Governor's Office. A number of state agencies have roles and responsibilities that need to be coordinated to achieve California's aggressive climate change goals. Those agencies include: the California Air Resources Board (CARB), a department of the California Environmental Protection Agency (Cal-EPA), which is responsible for regulating air pollution and reducing greenhouse gases; the California Energy Commission (CEC), which is responsible for energy policy and planning; the California Public Utilities Commission (CPUC), which regulates investor-owned utilities and other entities providing energy, transportation, and water services and helps with consumer protection; and the California Independent System Operator (CAISO), which is an independent non-profit entity (established by state law but not a state agency) that manages a substantial portion of California's power grid.

20 2002 Cal Stats. Ch. 200 (A.B. 1493) (West).

21 *E2 Advocacy Projects: California Clean Cars Campaign*, ENVTL. ENTREPRENEURS, available online at <https://www.e2.org/jsp/controller?docName=campaignDisplay&activityName=CalifCleanCars1493> (last visited May 19, 2015).

22 Cal. Health & Safety Code § 38500 (West 2015).

The interagency process used to launch the complex regulatory mandates included in California's AB32 holds a number of lessons that may be pertinent to federal efforts to coordinate agency climate change-related implementation efforts. The key drivers for this successful interagency process included the following:

- The Governor's Office, representing the state's chief executive, played a key role in overseeing the interagency process. Importantly, however, the Governor's Office did not seek to directly manage the process, but instead was part of it, and available to step in and enforce discipline among the agencies involved, when necessary. This model of participation by the chief executive — without purporting to be “in charge” of the implementation effort — offers a blueprint that could be useful when crafting White House involvement in interagency implementation activities.
- The California climate change legislation explicitly designated a single state agency (the California Air Resources Board, CARB) to direct a structured, interagency implementation effort. With the legitimacy afforded by the legislation and the Governor's backing, CARB was able to organize a collaborative effort that took full advantage of other agencies' input and expertise by maintaining strong lines of communication among the agencies throughout the process.
- In addition to CARB's leadership and overall accountability, the Climate Action Team—established under AB32—was divided into a number of crosscutting subgroups that enabled relevant agencies to work together to develop emissions reduction goals that made sense for all of the agencies involved. This type of hands-on involvement by agencies is a critically important element in successful interagency implementation efforts.
- All parties involved understood the importance of the task of implementing the groundbreaking elements of California's pioneering climate change law. There was a unity of purpose shared across the many agencies involved.
- As with the executive orders related to reducing the federal government's carbon footprint, AB32 included clear metrics that led to more defined goals for each agency. Success (or failure) could be identified, and measured, with each agency having an identified subset of the state's overall goal for which they were responsible.

6. Coordinating the Siting of Major Renewable Energy Projects on Public Lands

When the Obama Administration took office in January 2009, the Department of the Interior had not issued a single permit for a utility-scale solar project on its expansive public lands. Given the burgeoning interest in renewable energy, and the Southwest's powerful solar resource, a backlog of over four hundred renewable energy project applications had piled up. The new Administration wanted to move forward with clean energy projects on public lands, but because BLM's customary permitting process often took four or five years for large projects, Interior could not proceed in a “business as usual” manner and achieve its policy goals.²³

Secretary Salazar and his senior team recognized that effective interagency coordination would be needed to implement a successful permitting strategy for utility-scale solar and other renewable energy projects on the public lands. Multiple bureaus in the Interior Department needed to sign off on renewable energy permits, including agencies that might be negatively impacted by major renewable energy projects, such as the U.S. Fish & Wildlife Service, the U.S. Park Service, and the Bureau of Indian Affairs. With these conflicting agency interests under one roof, Interior was in a unique position to experiment with new approaches for facilitating a more timely and effective interagency permitting process.

23 David J. Hayes, *Leaning on NEPA to Improve the Federal Permitting Process*, 45 *Env'tl. L. Rev.* 10018, 10018 (2015).

Instead of the typical interagency challenge in which the White House oversees a process involving several different Departments with differing missions, the renewable energy context had the Secretary of the Interior acting in the White House role, overseeing an “interagency-type” coordination process (technically, an intraagency coordination process) involving several different bureaus with differing missions within the same Department. The approach taken by Secretary Salazar and his team in addressing this interagency permitting challenge was successful. DOI improved the pathway to solar and wind energy permit processing from an average of four years to one and a half years.²⁴ The Department achieved the 2005 Environmental Policy Act’s goal of siting 10,000 megawatts of renewable energy three years ahead of schedule.²⁵ Key takeaways from this “interagency” process include:

- **Leadership Mandate:** Early on, Interior Secretary Ken Salazar issued Secretarial Order 3285A1, which established renewable energy siting as a priority of the Department and established a new intraagency approach among Interior’s bureaus to facilitate permitting decisions and improve environmental results.
- **Top-Level, Hands-On Engagement:** The Interior Department formed a “Strike Team”—made up of senior decision-makers from each bureau, and managed with a representative of the Secretary—to develop and manage an efficient permitting process that respected the interests of all of the impacted agencies and stakeholders. The hands-on coordination by the Secretary’s office demonstrated the priority of the interagency effort, and the office’s willingness to troubleshoot issues for the agencies was key to the effort’s success. (There are parallels to OMB’s involvement in the infrastructure permitting modernization effort, discussed below.)
- **Early Planning and Conflict Prevention:** Interior’s interagency permitting process institutionalized early planning and conflict prevention by bringing in potentially impacted bureaus and key stakeholders to meet with project developers on the front end to identify potential fatal flaws in projects and provide an opportunity to retool projects to reduce or eliminate objections. Leadership from the Secretary’s Office played an important role in facilitating this process.
- **Finding Budget Support for Priority Needs:** The Secretary’s Office recognized that improved permitting would require more resources, and it maximized available financial tools to bring support to the effort. This contrasts with many interagency coordination efforts in which discussion of serious budget issues is taboo.
- **Focus on Implementation and Results:** This approach required an emphasis on implementation and decision-making by the principals involved. High-level individuals in the Secretary’s office and senior positions in the bureaus had to commit to the process and be accountable for results. This differed from many interagency policy efforts that revolve around report writing and the chronicling of policy improvements. Here, the emphasis was on action-oriented implementation activities, proceeding in real time.

The White House has applied some of the lessons learned from the Interior experience across the Administration through the President’s Modernizing Infrastructure Permitting Initiative. This is an ambitious and important interagency implementation effort. Important takeaways from the effort include:

- The Office of Management and Budget has invested significant White House resources in this interagency implementation effort. It is unusual for the White House to dedicate significant staff time to a project, but the benefits of the commitment have been substantial, enabling OMB to obtain a deeper understanding of the difficulties of coordinating the permitting of complex projects across several agencies.

24 U.S. Gov’t Accountability Office, GAO-13-189, *Renewable Energy: Agencies Have Taken Steps Aimed at Improving the Permitting Process for Development on Federal Lands* 18 (2013) [hereinafter “GAO Report”].

25 Steve Black & Neal Kemkar, *Obama Administration Efforts to Expand Domestic Energy Production: A View from Public Lands*, A.L.I. (Feb. 2013) at 1

- OMB has married its investment in staff time with a commitment to learn from, and adopt, best permitting practices employed by leading permitting agencies (e.g., Department of the Interior; Department of Transportation).
- There is a significant question how the permitting reforms gained through the OMB-led infrastructure permitting modernization effort can be institutionalized so they do not fall away as personnel and Administrations change. This is a serious issue for many interagency implementation efforts. In this case, there are viable legislative and regulatory actions that can be taken to lock in the operational approaches that have been piloted through the initiative.²⁶ Congress recently took a helpful step in that regard by codifying some administrative permitting reforms for large infrastructure projects in its recent enactment of the FAST Act.²⁷

CONCLUSION

The Stanford Law School report reviewed in this paper acknowledges that the White House has an important role to play in helping to coordinate and guide complex, multi-agency implementation challenges, and that it has succeeded in doing so in some cases. It is equally true, however, that the White House's tendency to create multiple White House-centric task forces and other, one-of-a-kind management structures with purported responsibility to oversee how governmental services are delivered has, in several cases, degraded clarity of mission and accountability, and led to sub-optimal results.

The next President should devote more disciplined attention to structuring important Administration initiatives in a manner that will produce optimal results. When it comes to implementing climate change priorities that have been set by the White House, responsibility should rest primarily with cabinet agencies that have the budget, staff, expertise and jurisdiction to deliver on policy promises. For implementation, the White House role typically should focus on facilitating coordination among cabinet secretaries and, where appropriate, assisting them in developing common, cross-agency implementation programs and tools.

26 David J. Hayes, *Leaning on NEPA to Improve the Federal Permitting Process*, 45 *Env'tl. L. Rev.* 10018, 10018 (2015).

27 David J. Hayes, *Congress Just Enacted New Permitting Requirements for Energy Projects: Did You Miss It?* (December 10, 2015), *available online at* <https://law.stanford.edu/2015/12/10/congress-just-enacted-new-permitting-requirements-for-energy-projects-did-you-miss-it/>

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NEXT STEPS TO REFORM THE REGULATIONS GOVERNING OFFSHORE OIL AND GAS PLANNING AND LEASING

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ABSTRACT

The Department of the Interior manages offshore oil and gas activities in federal waters. While the agency has proposed and/or enacted important improvements to the rules that govern some of those activities, it has not modernized the regulations that govern offshore oil and gas planning, lease sales, or the review and permitting of exploratory drilling. These phases of the process are overseen by the Bureau of Ocean Energy Management (BOEM), and, as was shown in our earlier publication on this topic, are ineffective and in need of modernization. In this Article, we argue that fundamental reform is necessary and highlight a series of key themes and topics that must be addressed to improve the regulatory process and promote better, more consistent management outcomes. While the Article draws on examples from frontier areas – in particular the U.S. Arctic Ocean – the recommended changes would apply to and benefit all areas of the OCS.

INTRODUCTION

In this Article, we build on *What About BOEM? The Need to Reform the Regulations Governing Offshore Oil and Gas Planning and Leasing*,¹

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which made the case that the regulations governing offshore oil and gas planning and leasing activities on the Outer Continental Shelf (OCS) are outdated, ineffective, and in need of revision. The previous Article showed that the nature of the offshore oil and gas industry is changing and that regulations applicable to Bureau of Ocean Energy Management (BOEM) obligations have not kept pace with those changes.²

Here, we take that call for reform one step further by suggesting potential improvements to the regulations that govern three of BOEM's substantive obligations: (1) development of five-year OCS oil and gas leasing programs; (2) sale of OCS leases to oil and gas companies; and (3) review of OCS exploration drilling plans. At these stages of the process, BOEM determines where and under what circumstances oil and gas companies may be allowed to explore for—and potentially develop and produce—hydrocarbons on the OCS. As in our earlier Article, most of the justifications presented here focus on frontier areas and, in particular, potential oil and gas activities in the U.S. Arctic Ocean. The changes we recommend, however, would apply to and benefit all areas of the OCS.

In crafting these recommendations, we highlight recent progress and identify the benefits of codifying changes through regulations. We do not, however, recommend specific language or address individual regulatory provisions that should be revisited. Recognizing that fundamental changes need to be made to the regulations, we focus on key themes that would improve the regulatory process and foster better management outcomes.

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1. Michael LeVine, Andrew Hartsig & Maggie Clements, *What About BOEM? The Need to Reform the Regulations Governing Offshore Oil and Gas Planning and Leasing*, 31 ALASKA L. REV. 231, 231–62 (2014).

2. Shortly before this Article went to press, DOI issued a rule to restructure and reorder many of BOEM's regulations. See *Leasing of Sulfur or Oil and Gas in the Outer Continental Shelf*, 81 Fed. Reg. 18,111, 18,111–76 (Mar. 30, 2016). The rule will add new sections, eliminate unnecessary text, and make other changes intended to clarify BOEM regulations. These changes are largely administrative in nature, and they do not remedy the substantive shortcomings identified in this Article. However, readers should be aware that the citations provided in this Article pre-date the new rule, which is scheduled to take effect at the end of May, 2016. *Id.* at 18,112. When the new rule takes effect, the citations to BOEM regulations in this Article may not correspond to BOEM's revised regulatory structure.

Further, recent decisions to stop certain offshore activities in frontier areas—like Shell’s decision to halt Arctic Ocean exploration “for the foreseeable future”³—create an opportunity to effectuate change. The Department of the Interior (DOI) can use this interval to better prepare for future leasing decisions and improve the overall management of the federal program. Interest in Arctic Ocean leasing and exploration, for example, has been cyclical.⁴ Proactive steps to address regulatory deficiencies should lead to better decisions, if and when interest reemerges. Meanwhile, there is likely to be continued demand for offshore leases in the Gulf of Mexico, and implementing these recommendations will help BOEM make smarter, more transparent, and more consistent decisions throughout its management of the OCS. The recent announcement by the Secretary of the Interior that DOI would pause all new coal leasing and comprehensively evaluate the federal coal program⁵ and the mounting public concern about the climate impacts from fossil fuel development reflect a recognition that the type of review we advocate is both possible and timely.

This Article suggests a pragmatic path toward meaningful reform of BOEM’s planning, leasing, and exploration plan review processes. Part I provides necessary background and context for our argument, including the importance of effective regulations, changes that have already been made, and the need for further reform. In Part II, we describe our suggested regulatory reforms. We recommend both overarching changes that are broadly applicable to new regulations as well as specific reforms targeting five-year planning, lease sales, and permitting and authorization of exploration activities on the OCS. These recommendations call for greater transparency, more attention to environmental and social risks, and the use of modern economic tools, among other improvements. We conclude with recommendations for a path forward for DOI.

3. Press Release, Shell Global, Shell Updates on Alaska Exploration (Sept. 28, 2015).

4. Michael LeVine, Peter Van Tuyn & Layla Hughes, *Oil and Gas in America’s Arctic Ocean: Past Problems Counsel Precaution*, 37 SEATTLE UNIV. L. REV. 1271, 1314–21 (2015) (noting the industry let most Arctic Ocean leases expire after a surge of leasing in the 1980s).

5. Secretarial Order No. 3338, Discretionary Programmatic Environmental Impact Statement to Modernize the Federal Coal Program, (Jan. 15, 2016), http://www.blm.gov/style/medialib/blm/wo/Communications_Directorate/public_affairs/news_release_attachments.Par.4909.File.dat/FINAL%20SO%203338%20Coal.pdf.

I. BACKGROUND AND CONTEXT

A. Effective Regulations Are Important for Effective Agency Processes

The primary function of agency regulations is to “implement, interpret, or prescribe law or policy.”⁶ Lawmakers frequently craft statutes that are “so broadly phrased that agencies have enormous leeway to fill in the gaps—both procedural and substantive—of the legislation so long as they keep within the terms of the governing statutes.”⁷ In other words, Congress frequently gives administrative agencies extensive discretion to set policies and procedures.⁸ An agency’s power “to administer a congressionally created and funded program necessarily requires the formulation of policy and the making of rules to fill any gap left, implicitly or explicitly, by Congress.”⁹ When confronted with such a gap, federal agencies are empowered to “elucidate a specific provision of the statute by regulation.”¹⁰

Regulations must be consistent with the underlying statutory framework and Congress’s intentions.¹¹ Truly effective regulations, however, go beyond that basic requirement. They are “consistent, sensible, and understandable”¹² and “promote predictability and reduce uncertainty.”¹³ Agencies must strive “to promote such coordination, simplification, and harmonization” among multiple regulatory entities.¹⁴ Moreover, existing regulations must be reviewed periodically to determine if they are “outmoded, ineffective, insufficient, or excessively burdensome.”¹⁵ As President Obama stated, federal agencies have a “mission to root out regulations that conflict, that are not worth the cost, or that are just plain dumb.”¹⁶

6. 5 U.S.C. § 551(4) (2012); Exec. Order No. 12,866, Sec. 3(d), 3 C.F.R. § 638 (1993).

7. WILLIAM F. FOX, JR., UNDERSTANDING ADMINISTRATIVE LAW 5 (4th ed. 2000).

8. *Id.*

9. *Morton v. Ruiz*, 415 U.S. 199, 231 (1974).

10. *Chevron v. Natural Res. Def. Council*, 467 U.S. 837, 844 (1984).

11. *See, e.g., id.* at 843 (noting that both agencies and courts “must give effect to the unambiguously expressed intent of Congress”). *See also* Exec. Order No. 12,866, *supra* note 6, at § 2(a) (noting that agencies must ensure that “regulations are consistent with applicable law”).

12. Exec. Order No. 12,866, *supra* note 6, at § 2(a).

13. Exec. Order No. 13,563, Sec. 1(a), 3 C.F.R. § 215 (2012).

14. *Id.* § 3.

15. *Id.* § 6.

16. Barack Obama, Commentary, *Toward a 21st-Century Regulatory System*, WALL ST. J. (Jan. 18, 2011).

Regulations that do not effectively fill the gaps left by Congress create the possibility of inconsistent agency decisions and increase the risk of litigation. Effective rules, on the other hand, streamline agency analyses, ensure good practices are carried forward, and help keep pace with innovation.

B. The Need to Reform Existing Rules

The Outer Continental Shelf Lands Act (OCSLA)¹⁷ is the primary law governing management of oil and gas activities in federal waters. The statute is intended to enable “expeditious and orderly development [of OCS resources], subject to environmental safeguards, in a manner which is consistent with the maintenance of competition and other national needs.”¹⁸ OCSLA creates a four-stage process for management of offshore oil and gas activities: (1) developing a Five-Year Leasing Program, (2) holding the lease sales scheduled in that Program, (3) evaluating and permitting exploration activities, and (4) evaluating and permitting development and production activities.¹⁹ At each of these stages, the statute provides some direction, but its mandates are broadly stated and afford the agency substantial discretion.²⁰

In many respects, OCSLA itself should be updated to reflect the changing industry and lessons learned in the wake of the *Deepwater Horizon* tragedy and Shell’s failed 2012 drilling season.²¹ Congress, however, has taken no action to amend the statute and is unlikely to do so in the current political environment.

In contrast, DOI has made progress in advancing reforms using the authority and discretion afforded by the statute. Most notably, DOI disbanded the troubled Mineral Management Service (MMS) and replaced it with three independent successor agencies: BOEM, the Bureau of Safety and Environmental Enforcement (BSEE), and the Office of Natural Resources Revenue (ONRR).²² This change was intended to

17. 43 U.S.C. §§ 1331–56 (2012).

18. *Id.* § 1332(3).

19. *Id.* §§ 1337, 1340, 1344, 1345, 1351. *See also* LeVine, Hartsig & Clements, *supra* note 1, at 235–36 (explaining the four-stage process in detail). Additional information about this framework is also available at LeVine, Van Tuyn, & Hughes, *supra* note 4, at 1308–10.

20. LeVine, Hartsig & Clements, *supra* note 1, at 254–55.

21. *See* Andrew Hartsig, *Shortcomings and Solutions: Reforming the Outer Continental Shelf Oil and Gas Framework in the Wake of the Deepwater Horizon Disaster*, 16 OCEAN & COASTAL L. J. 269, 273 (2011). *See also* LeVine, Van Tuyn, & Hughes, *supra* note 4 (describing needed changes).

22. HENRY B. HOGUE, CONG. RESEARCH SERV., R41485, REORGANIZATION OF THE MINERALS MANAGEMENT SERVICE IN THE AFTERMATH OF THE DEEPWATER HORIZON OIL SPILL 14 (2010). *See also* LeVine, Hartsig & Clements, *supra* note 1, at

improve DOI's performance with respect to ensuring: (1) balanced and responsible development of energy resources on the OCS; (2) safe and environmentally responsible exploration and production and enforcement of applicable regulations; and (3) fair return to the taxpayer from offshore royalty and revenue collection and disbursement activities.²³

DOI has also made progress in modernizing some of its regulations. By and large, these changes have applied to the revenue collection functions of ONRR and to the safety and inspection functions of BSEE.²⁴

This progress has continued since publication of our earlier Article. In addition to the reforms described there, BOEM has increased the liability limits for offshore facilities to keep pace with inflation.²⁵ This update, which went into effect in January 2015, was the first time the liability limits were changed since they were required in 1990 by the Oil Pollution Act.²⁶

In February 2015, BSEE and BOEM proposed a new safety and spill prevention rule applicable to exploration in the U.S. Arctic Ocean.²⁷ When finalized, this rule will codify important new requirements, like same-season relief well capability, production of an Integrated Operations Plan, and seasonal restrictions to account for ice cover.²⁸ While important, the new safety and prevention requirements do not address all of the risks in the Arctic and do not take advantage of other opportunities to improve safety and response.²⁹

In March 2016, BOEM released proposed new rules that would update the manner in which the agency regulates air emissions from offshore operations.³⁰ The new rule is responsive to a provision in the

251 (discussing the reform in detail).

23. *The Reorganization of the Former MMS*, U.S. BUREAU OF OCEAN ENERGY MGMT. [hereinafter BOEM], <http://www.boem.gov/About-BOEM/Reorganization/Reorganization.aspx> (last visited Mar. 24, 2016).

24. LeVine, Hartsig & Clements, *supra* note 1, at 251–53.

25. Consumer Price Index Adjustments of the Oil Pollution Act of 1990 Limit of Liability for Offshore Facilities, 79 Fed. Reg. 73,832, 73,832–33 (Dec. 12, 2014).

26. *Id.* See also Press Release, BOEM, BOEM Adjusts Limit of Liability for Oil Spills from Offshore Facilities (Dec. 11, 2014) (announcing the increase in liability limits).

27. Oil and Gas and Sulphur Operations on the Outer Continental Shelf—Requirements for Exploratory Drilling on the Arctic Outer Continental Shelf, 80 Fed. Reg. 9,916, 9,916–71 (proposed Feb. 24, 2015).

28. *Id.* at 9, 924–26.

29. *Arctic Resources and American Competitiveness: Oversight Hearing Before the Subcomm. on Energy and Mineral Res. of the H. Comm. on Nat. Res.*, 114th Cong. 10–11 (June 16, 2015) (statement of Michael LeVine, Pacific Senior Counsel, Oceana).

30. Air Quality Control, Reporting, and Compliance, 81 Fed. Reg. 19,717

2012 Consolidated Appropriations Act in which Congress transferred the authority to regulate air pollution from activities on the OCS offshore of the North Slope Borough in Alaska from the Environmental Protection Agency to DOI.³¹ The new rule applies to activities in the Gulf of Mexico and Chukchi and Beaufort Sea planning areas.

None of these regulatory changes address in any way BOEM's obligations to prepare five-year leasing programs or hold lease sales; nor do they improve the manner in which BOEM evaluates and approves exploration plans.³² The regulations that govern these phases of the OCSLA process remain essentially unchanged from their initial promulgation more than three decades ago.³³ They have not kept pace with changes in the industry. They fail to provide effective guidance, reflect new agency culture, incorporate updated analytical methodologies, or conform to modern policy priorities.

There have been repeated calls for fundamental reform of DOI's regulations. Both the National Commission on the BP *Deepwater Horizon* Oil Spill and Offshore Drilling (National Commission) and Council on Environmental Quality (CEQ) have urged reform of planning and leasing regulations.³⁴ DOI has the authority to make changes that would substantially improve decision-making. Updates to BOEM's regulations could: help address the disconnect between the old regulations and the new agency culture; remedy substantive problems that plague existing planning, leasing, and exploration processes; and more effectively implement new policy direction.³⁵ In addition, new rules could have the salutary benefit of providing certainty to oil companies. Echoing similar statements from ConocoPhillips and Statoil, Shell placed some of the blame for its withdrawal from the Arctic Ocean on an uncertain regulatory environment.³⁶ Clarifying the planning, leasing, and exploration plan approval processes could provide a measure of certainty.

(proposed Mar. 17, 2016) (to be codified at 30 C.F.R. pt. 550) (Fed. Reg. notice forthcoming), <http://www.boem.gov/Air-Quality-Proposed-Rule/>.

31. Consolidated Appropriations Act, 2012 Pub. L. No. 112-74, § 432(b), 125 Stat. 1048-49 (2011).

32. Arguably, the proposed Arctic regulations and air emission rule could affect the equipment companies are required to have and the standards for spill response and air emissions to which companies are held during exploration. They do not, however, reflect a comprehensive review of those regulations or address the more systemic deficiencies identified here.

33. LeVine, Hartsig & Clements, *supra* note 1, at 237-38.

34. *Id.* at 243-47.

35. *Id.* at 254-58.

36. See Press Release, Shell Global, *supra* note 3 (noting "the challenging and unpredictable federal regulatory environment in offshore Alaska").

II. RECOMMENDED REGULATORY REFORMS

There is both need and opportunity to update BOEM's regulations. Here, we explain the nature of some of the changes that would help modernize these rules. Part A of this section suggests overarching reforms needed to address problems that occur throughout the OCSLA process. Parts B, C, and D recommend more specific reforms to the regulations that govern development of five-year OCS oil and gas leasing programs, sale of OCS leases to oil and gas companies, and review of exploration drilling proposals.

For several reasons, we do not recommend specific language or address individual regulatory provisions that should be revisited. As was made clear in our earlier Article, the regulations governing planning, leasing, and permitting exploration are sufficiently inadequate so as to require fundamental change. Because the rules should be reconceived and rebuilt to implement OCSLA effectively, we focus on key themes that, if addressed properly, will improve the fundamental regulatory process and lead to better management outcomes. Specific regulatory language can be developed as the agency crafts new rules.

A. Overarching Reforms

Some regulatory shortcomings affect all stages of the OCSLA process or reoccur in different ways throughout BOEM's planning, leasing, and exploration regulations. Meaningful reform would address these overarching problems systemically at each phase of the process.

1. *Clarify and Improve the Use of National Environmental Policy Act Analyses in Management of the OCS*

Unlike other federal agencies, BOEM does not have its own guidance or regulations defining the way in which it fulfills its National Environmental Policy Act (NEPA) obligations.³⁷ The lack of specific guidance has contributed to calls from the National Commission, CEQ, and others for reform of the manner in which DOI addresses its NEPA

37. See, e.g., NAT'L COMM'N ON THE BP DEEPWATER HORIZON OIL SPILL AND OFFSHORE DRILLING, DEEP WATER: THE GULF OIL DISASTER AND THE FUTURE OF OFFSHORE DRILLING—REPORT TO THE PRESIDENT 261 (2011) (noting that BOEM's predecessor agencies never developed formal NEPA guidance) [hereinafter NAT'L COMM'N, DEEP WATER]. In contrast, for example, the Bureau of Land Management and U.S. Fish and Wildlife Service have handbooks providing NEPA guidance. See generally BUREAU OF LAND MGMT., NATIONAL ENVIRONMENTAL POLICY ACT HANDBOOK H-1790-1 (2008); U.S. FISH & WILDLIFE SERV., NEPA FOR NATIONAL WILDLIFE REFUGES: A HANDBOOK (2014).

obligations with regard to OCS activities.³⁸ In addition, BOEM's compliance with NEPA has been the subject of a series of lawsuits that highlight the value of fundamental review.³⁹ Addressing these problems through new regulations will help BOEM better comply with its NEPA obligations, make better use of public expertise and input, and reach more robust decisions.

Effective regulations would clarify the way in which BOEM complies with NEPA requirements at each stage of the OCSLA process. As CEQ put it, BOEM should "[e]nsure that NEPA analyses fully inform and align with substantive decisions at all relevant decision points."⁴⁰ The problematic manner in which BOEM has approached NEPA compliance is particularly evident with regard to Chukchi Sea Lease Sale 193. The Environmental Impact Statement (EIS) underlying the decision to hold the sale was invalidated by the federal district court in Alaska on the grounds that the government failed to comply with a CEQ regulation addressing missing scientific information.⁴¹ On remand, the agency addressed that issue but did not fix a fundamental problem with the scenario it used to evaluate the potential impacts from development even though that problem had been identified in public comments on the original EIS and Supplemental EIS. The Ninth Circuit Court of Appeals then invalidated the Supplemental EIS.⁴² BOEM prepared a Second Supplemental EIS, and a subsequent Office of Inspector General Report identified a series of problems with the manner in which that analysis was prepared.⁴³ That Second Supplemental EIS has also been

38. See LeVine, Hartsig & Clements, *supra* note 1, at 245. DOI's own Inspector General has identified problems with NEPA compliance and called for the agency to "[e]xplore and encourage other processes, policies, and incentives that promote a culture of balanced stewardship and evaluate existing policies and practices that may impede the ability to achieve this balance." OFFICE OF THE INSPECTOR GEN., U.S. DEP'T OF THE INTERIOR, A NEW HORIZON: LOOKING TO THE FUTURE OF THE BUREAU OF OCEAN ENERGY MANAGEMENT, REGULATION AND ENFORCEMENT 35 (Dec. 7, 2010), <https://www.doioig.gov/sites/doioig.gov/files/A-New-Horizon-Public.pdf>.

39. See, e.g., LeVine, Van Tuyn & Hughes, *supra* note 4, at 1328-30, 1342-43 (describing NEPA-related litigation stemming from DOI's sale of OCS lease tracts in the Chukchi Sea).

40. COUNCIL ON ENVTL. QUALITY [CEQ], REPORT REGARDING THE MINERALS MANAGEMENT SERVICE'S NATIONAL ENVIRONMENTAL POLICY ACT POLICIES, PRACTICES, AND PROCEDURES AS THEY RELATE TO OUTER CONTINENTAL SHELF OIL AND GAS EXPLORATION AND DEVELOPMENT 4 (Aug. 16, 2010) [hereinafter CEQ, MMS NEPA POLICIES].

41. *Native Vill. of Point Hope v. Salazar*, 730 F. Supp. 2d 1009, 1018 (D. Alaska 2010).

42. *Native Vill. of Point Hope v. Jewell*, 740 F.3d 489, 505 (9th Cir. 2014).

43. OFFICE OF INSPECTOR GEN., U.S. DEP'T OF THE INTERIOR, INVESTIGATIVE REPORT OF MANAGEMENT INTERFERENCE WITH LEASE SALE 193 (Dec. 7, 2015), https://www.doioig.gov/sites/doioig.gov/files/WebRedacted_MgmtInterfere

challenged in court.⁴⁴

An important part of meeting NEPA obligations is ensuring that BOEM uses “tiering” appropriately and effectively. Tiering occurs when an agency relies on or incorporates analysis from a broader NEPA document in subsequent analyses.⁴⁵ Proper use of tiering can help avoid repetition in NEPA documents that analyze different stages of the OCSLA process. Improper use of tiering, however, can result in insufficient analysis and review.⁴⁶ In the wake of the *Deepwater Horizon* disaster, CEQ recommended that BOEM “reexamine its NEPA implementation policies to ensure that its use of tiering is both clear and well-defined, and is not being used to limit site-specific environmental analysis.”⁴⁷ Similarly, the National Commission recommended that BOEM develop “guidelines for applying NEPA in a consistent, transparent, and appropriate manner to decisions affecting OCS oil and gas activities.”⁴⁸

Regulations could help define when preparation of a new or supplemental EIS is required. At the exploration stage, for example, significant new information about projected impacts would necessitate a supplemental EIS. This situation is especially likely to arise in frontier areas or when operators intend to use new technologies. Regulations should also make clear that exploration activities do not qualify for categorical exclusion from the NEPA process.

To further this effort, BOEM can help define the rigorous cumulative impact analyses needed in an EIS to avoid the potential for geographic or temporal segmentation. These regulations could improve analyses by providing context-specific standards and methods to ensure that agency staff has the direction necessary to consistently produce high-quality cumulative impact analyses. Similarly, BOEM should require a full assessment of the effects of exploration and development in site-specific lease sale EISs before OCS leases are sold. Doing so would help fulfill NEPA’s purpose of “looking before you leap.”⁴⁹

nce_Lease193EIS.pdf.

44. Plaintiffs’ Opening Brief at 1, *Alaska Wilderness League v. Jewell*, 1:08-cv-00004-RRB (D. Alaska Aug. 28, 2015).

45. CEQ, Memorandum on Effective Use of Programmatic NEPA Reviews 7-9 (Dec. 18, 2014).

46. NAT’L COMM’N, *DEEP WATER*, *supra* note 37, at 260 (noting that “[a]s applied by MMS . . . tiering was not always consistent with its original purpose: instead, it created a system where deeper environmental analysis at more geographically targeted and advanced planning stages did not always take place.”).

47. CEQ, *MMS NEPA POLICIES*, *supra* note 40, at 23.

48. NAT’L COMM’N, *DEEP WATER*, *supra* note 37, at 261.

49. See, e.g., William J. Snape III, *Joining the Convention on Biological Diversity: A Legal and Scientific Overview of Why the United States Must Wake Up*, 10

New regulations would provide the opportunity to codify explicitly the requirement to analyze low-probability, high-risk events to help ensure that the agency and other stakeholders are prepared for a worst-case disaster. After the *Deepwater Horizon* tragedy, CEQ recommended that BOEM “take steps to incorporate catastrophic risk analysis going forward.”⁵⁰ Likewise, the National Commission recommended that BOEM “incorporate the ‘worst-case scenario’ calculations from industry oil spill response plans into NEPA documents and other environmental analyses or reviews” to inform the agency’s “estimates for potential oil spill situations in its environmental analyses.”⁵¹ To its credit, BOEM incorporated a “very large oil spill” risk analysis in its supplemental EISs for Chukchi Sea Lease Sale 193.⁵² New NEPA regulations would ensure that this type of risk is considered in all future OCS environmental analyses.

Some of the other changes suggested below—for example, rethinking the manner in which BOEM interprets the thirty-day deadline for review of an exploration plan—would affect the manner in which BOEM fulfills its NEPA obligations.⁵³ Addressing these issues through a comprehensive rulemaking would help provide consistency and clarity.

2. Increase Transparency

BOEM regulations can be revised to improve transparency and public participation in OCS decision-making processes. As President Obama stated on his first day in office, “[o]penness will strengthen our democracy and promote efficiency and effectiveness in Government.”⁵⁴ This principle is particularly important as public scrutiny of offshore oil and gas activities has grown in the wake of the *Deepwater Horizon* accident and Shell’s failed 2012 drilling season, and as the need to take action to address greenhouse gas emissions is increasingly recognized.⁵⁵

SUSTAINABLE DEV. L. & POL’Y 6, 10 (2010) (characterizing NEPA as “the epitome of a ‘look before you leap’ mandate”).

50. CEQ, MMS NEPA POLICIES, *supra* note 40, at 27.

51. NAT’L COMM’N, DEEP WATER, *supra* note 37, at 267.

52. BOEM ALASKA OCS REGION, OIL AND GAS LEASE SALE 193 IN THE CHUKCHI SEA, ALASKA: FINAL SUPPLEMENTAL ENVIRONMENTAL IMPACT STATEMENT VOL. I, APPENDIX D (2011).

53. See *infra* III.D.1.

54. Memorandum on Transparency and Open Government, 2009 DAILY COMP. PRES. DOC. 1 (Jan. 21, 2009).

55. Indeed, drilling for oil and gas in the Arctic Ocean became a campaign issue for some presidential candidates even in the early stages of the 2016 race. See, e.g., Alan Rappoport, *Disagreeing with President, Hillary Clinton Says She Opposes Drilling in Arctic Ocean*, N.Y. TIMES (Aug. 18, 2015). The issue also

Transparency with respect to management of OCS activities can help the American public be assured that it is receiving fair market value for any OCS energy production and that the risks of any oil spills or other negative externalities are being fairly evaluated and considered.⁵⁶

To implement the president's commitment to open government, federal agencies were directed to take three important steps: publish information online; improve the quality of government information; and create and institutionalize a culture of open government.⁵⁷ DOI has created and updated an Open Government Plan through which it has taken some important steps to further transparency related to OCS activities.⁵⁸ Notably, the United States has spent more than three years working toward implementation of the Extractive Industries Transparency Initiative (EITI), "a global standard that promotes revenue transparency and accountability in the extractive sector" by requiring "report[s] in which governments and companies publicly disclose royalties, rents, bonuses, taxes and other payments from oil, gas, and mineral resources."⁵⁹ DOI has gone beyond the requirements of EITI and is planning to publish all revenue data collected by the ONRR from extractive companies operating on federal lands.⁶⁰

In addition, DOI has participated in the creation of data.gov, which provides high quality data sets for public use,⁶¹ and the agency is working to revamp BSEE's website to make it more user-friendly and accessible. With regard to exploration operations in the Arctic Ocean, BOEM allowed for public comments on the NEPA process related to

prompted twelve U.S. Senators to send a letter urging President Obama not to authorize drilling in the Arctic Ocean. *See* Letter from Jeffrey Merkley, et al., United States Senators to Barack Obama, President of the United States (Sept. 25, 2015), <http://www.sanders.senate.gov/download/sanders-whitehouse-on-arctic-drilling-?inline=file>.

56. *See* 43 U.S.C. § 1344(a)(4) (2012) (requiring that "[l]easing activities . . . be conducted to assure receipt of fair market value for the lands leased and the rights conveyed by the Federal Government."). *See also* JAYNI FOLEY HEIN, INST. FOR POLICY INTEGRITY, HARMONIZING PRESERVATION AND PRODUCTION: HOW MODERNIZING THE DEPARTMENT OF THE INTERIOR'S FISCAL TERMS FOR OIL, GAS, AND COAL LEASES CAN ENSURE A FAIR RETURN TO THE AMERICAN PUBLIC 7 (June 2015) (discussing the fair market value requirement for offshore energy production) [hereinafter FOLEY HEIN, HARMONIZING PRESERVATION].

57. Peter R. Orszag, Memorandum for the Heads of Executive Departments and Agencies: Open Government Directive, M-10-06, 2-4 (Dec. 8, 2009).

58. DEP'T OF THE INTERIOR, OPEN GOVERNMENT PLAN 3.0 (June 2014).

59. DEP'T OF THE INTERIOR, U.S. EXTRACTIVE INDUSTRIES TRANSPARENCY INITIATIVE FACT SHEET 1 (Feb. 2015).

60. U.S. EXTRACTIVE INDUS. TRANSPARENCY INITIATIVE, EITI ANNUAL ACTIVITY REPORT 2014 2, 7-8 (June 30, 2015), https://eiti.org/files/usa_2014_annual_activity_report_aar.pdf.

61. *See generally* About Data.gov, DATA.GOV, <http://www.data.gov/about#collected> (last visited Mar. 24, 2016).

Shell's exploration plan and approval of its oil spill response plan, and BSEE made public the letters denying requests for suspensions of operations on Chukchi and Beaufort Sea leases.⁶² There is no formal requirement for such comment periods, and BSEE has not made letters like these public in the past.

Using the notice-and-comment rulemaking process to formalize practices that promote transparency and openness will help build trust, improve public participation in the decision-making process, and fulfill President Obama's pledge to ensure openness in government.⁶³ New regulations could require that federal regulators post on their websites—in a proactive and timely fashion—all non-privileged information related to exploration activities, including permitting, inspections, monitoring, and enforcement. For example, regulations should require BOEM and BSEE to post on their websites proposed plans and plan revisions, requests for modification, approvals, and similar documents. In addition, BOEM and BSEE could be required to make available to the public information on monitoring and enforcement activities, as well as data concerning incidents and near-misses, including causal information.

Transparency and public participation also would be improved by regulations designed to ensure that the public has an opportunity to review and provide feedback on all non-confidential aspects of exploration plans. While public notice and comment is already required in any EIS process, BOEM can ensure that all agency environmental assessments (EAs), including those related to the evaluation of OCS exploration plans, are available for public notice and comment. Addressing these issues systematically in BOEM's planning, leasing, and exploration regulations would help ensure better decisions,

62. Press Release, BOEM, BOEM Invites Public Comment to Inform Environmental Assessment and Analysis of Chukchi Sea Exploration Plan (Apr. 10, 2015); BSEE, Letter of Response to Statoil Suspension of Operations Request (Oct. 16, 2015); BSEE, Letter of Response to Shell Suspension of Operations Request (Oct. 16, 2015).

63. Organizations seeking information from DOI related to OCS activities have historically been required to submit requests pursuant to the Freedom of Information Act (FOIA). This process, though important, can be cumbersome for both the requestor and government agency. It has led to litigation and inefficiency. *See* Amended Complaint for Declaratory and Injunctive Relief at 1, Nat. Res. Defense Council v. Mineral Mgm't Serv., 1:08-cv-00936-BSJ-GWG (S.D.N.Y. 2008) (alleging violations of the FOIA by the Minerals Management Service); Complaint for Declaratory and Injunctive Relief at 3, Alaska Wilderness League v. Bureau of Ocean Energy Mgm't, 1:13-cv-00586 (D.D.C. 2013) (alleging violations of the FOIA by the BOEM). Increasing publicly available information should not displace FOIA obligations, but it could eliminate the inefficiencies that result when the agency requires FOIA requests for non-privileged information that could simply be made available.

accountability, and public participation.

3. *Ensure Effective Incorporation of Traditional, Local, and Indigenous Knowledge*

Regulations governing OCS oil and gas activities do not explicitly ensure incorporation of traditional, local, and indigenous knowledge into the decision-making process. This deficiency is particularly significant in the U.S. Arctic, where Alaska Natives may have information about geographic areas or resources that is otherwise unavailable to agency decision-makers.⁶⁴ In his Executive Order addressing coordination in the Arctic, President Obama specifically recognized that, as part of responsibly managing resources in the Arctic region, “we must rely on science-based decision-making and respect the value and utility of the traditional knowledge of Alaska Native peoples.”⁶⁵ Similarly, the National Ocean Policy implementation plan calls on federal agencies to integrate “traditional ecological knowledge and scientific data collected by indigenous groups.”⁶⁶ A federal interagency working group recommended improving “decision-makers’ access to integrated scientific information and traditional knowledge relevant to management in the Arctic.”⁶⁷ While these policies represent progress, they are not codified in BOEM’s regulations.

Promulgating regulations establishing a set of procedures to solicit and incorporate traditional knowledge will facilitate efficient flow of information between local and indigenous knowledge-holders and agency officials; improved regulations should also help ensure that federal agencies fully consider traditional knowledge in the decision-making process. Collection of relevant information from local and indigenous knowledge-holders will also help ensure that local concerns are heard from the outset, which may avoid complications later in the process. Effective guidance and mechanisms for this participation have the potential to improve products, decisions, and community relations.⁶⁸

64. Henry P. Huntington, *Using Traditional Ecological Knowledge in Science: Methods and Applications*, 10 *ECOLOGICAL APPLICATIONS* 1270, 1270 (2000).

65. Exec. Order No. 13,689, 80 Fed. Reg. 4,191 (Jan. 21, 2015).

66. NAT’L OCEAN COUNCIL, NATIONAL OCEAN POLICY IMPLEMENTATION PLAN 21 (Apr. 2013).

67. INTERAGENCY WORKING GROUP ON COORDINATION OF DOMESTIC ENERGY DEVELOPMENT AND PERMITTING IN ALASKA, MANAGING FOR THE FUTURE IN A RAPIDLY CHANGING ARCTIC: A REPORT TO THE PRESIDENT 47 (Mar. 2013).

68. See Huntington, *supra* note 64, at 1273 (concluding that traditional ecological knowledge “has made a demonstrable difference in many research projects and management strategies”).

4. Formalize and Codify Efforts to Improve Interagency Coordination

BOEM regulations could formalize a strong interagency consultation process for OCS oil and gas decision-making. OCSLA specifically mandates that, “[i]n the enforcement of safety, environmental, and conservation laws and regulations, the Secretary shall cooperate with the relevant departments and agencies of the Federal Government and of the affected States.”⁶⁹ However, the planning, leasing, and exploration plan approval regulations set out no specific mechanisms for such cooperation.

The need for more effective coordination has been widely recognized. The National Commission recommended that the National Oceanic and Atmospheric Administration (NOAA) “and other federal agencies with appropriate expertise should be encouraged to act as cooperating agencies in NEPA reviews of offshore energy production activities, including exploration and development plans and drilling permit applications.”⁷⁰ It also recommended that “[f]ederal agencies that submit comments to [BOEM] as part of a NEPA process should receive a written response indicating how the information was applied and if it was not included, why it was not included.”⁷¹ More recently, a review of Shell’s troubled 2012 offshore drilling program in Alaska recognized the importance of “close coordination among government agencies in the permitting and oversight process.”⁷²

Better rules defining processes for interagency coordination should lead to more informed decisions and may help avoid the appearance that input from expert agencies has not been effectively considered.⁷³ Some steps have been taken in this direction. For example, NOAA acted as a cooperating agency on a recent BOEM-led Programmatic EIS to assess geological and geophysical activities in the Mid and South Atlantic Ocean planning areas.⁷⁴ More generally, NOAA and BOEM signed a Memorandum of Understanding to ensure that OCS decision-

69. 43 U.S.C. § 1334(a).

70. NAT’L COMM’N, DEEP WATER, *supra* note 37, at 265.

71. *Id.*

72. U.S. DEP’T OF THE INTERIOR, REPORT TO THE SECRETARY OF THE INTERIOR: REVIEW OF SHELL’S 2012 ALASKA OFFSHORE OIL AND GAS EXPLORATION PROGRAM 5 (Mar. 8, 2013).

73. Letter from James W. Balsiger, Acting Assistant Adm’r, NOAA, to James Kendall, Acting Reg’l Dir., BOEM (Feb. 28, 2011), <https://alaskafisheries.noaa.gov/sites/default/files/chukchiseaoilgas.pdf>.

74. See BOEM, ATLANTIC OCS PROPOSED GEOLOGICAL AND GEOPHYSICAL ACTIVITIES MID-ATLANTIC AND SOUTH ATLANTIC PLANNING AREAS: FINAL PROGRAMMATIC ENVIRONMENTAL IMPACT STATEMENT 1-9 (2014) (noting that NOAA requested and was granted cooperating agency status).

making is science-based and fulfills both agencies' stewardship and conservation mandates.⁷⁵ More broadly still, President Obama established an interagency "National Ocean Council" to advance a "collaborative framework" for ocean and coastal stewardship and to "facilitate[] cohesive actions across the Federal Government."⁷⁶

In the Arctic, President Obama has recognized the need for more effective agency cooperation and created "an Arctic Executive Steering Committee . . . which shall provide guidance to executive departments and agencies . . . and enhance coordination of Federal Arctic policies across agencies and offices, and, where applicable, with State, local, and Alaska Native tribal governments and similar Alaska Native organizations, academic and research institutions, and the private and nonprofit sectors."⁷⁷ In addition, in 2011, the President created the Interagency Working Group on Coordination of Domestic Energy Development and Permitting in Alaska, which was charged with coordinating "the efforts of Federal agencies responsible for overseeing the safe and responsible development of onshore and offshore energy resources and associated infrastructure in Alaska."⁷⁸

BOEM can explicitly codify the manner in which it takes advantage of these and other mechanisms for coordination. Doing so would ensure that the coordination is implemented and continued through future administrations. In that way, the benefits of cooperation and coordination would become part of the long-term planning for the OCS.

B. Five-Year Program

In the five-year planning process, BOEM determines which areas of the OCS will be available for oil and gas leasing, and it schedules lease sales during the relevant five-year period. The plan, therefore, is the initial, broadest-scale step at which the government decides whether large swaths of the ocean will be made available for leasing to companies.

The regulations governing BOEM's five-year OCS leasing program, however, largely mirror the relevant statutory directives. For example, OCSLA Section 18 requires the Secretary of the Interior to "invite and

75. U.S. DEP'T OF THE INTERIOR & U.S. DEP'T OF COMMERCE, Memorandum of Understanding on Coordination and Collaboration Regarding Outer Continental Shelf Energy Development and Environmental Stewardship (May 19, 2011), http://www.noaa.gov/newsroom/stories/2011/pdfs/05232011_NOAA-BOEMRE-MOU.pdf.

76. Exec. Order No. 13,547, 75 Fed. Reg. 43,023, 43,024 (July 19, 2010).

77. Exec. Order No. 13,689, 80 Fed. Reg. 4,189, 4,191 (Jan. 26, 2015).

78. Exec. Order No. 13,580, 76 Fed. Reg. 41,989, 41,989 (July 15, 2011).

consider suggestions” for the five-year program from a variety of entities; the implementing regulations merely restate that requirement, instructing the Secretary to “invite and consider suggestions” from the same entities.⁷⁹ The five-year program regulations offer no substantive direction to agency staff or decision-makers and little guidance about how to best satisfy the broad statutory mandate to craft a schedule of oil and gas lease sales that will best meet national energy needs while balancing the potential for environmental damage, discovery of oil and gas, and adverse impacts on the coastal zone.⁸⁰ It is, perhaps, no coincidence that the five-year leasing program process has been subject to significant controversy, and a substantial number of the programs promulgated by DOI have been challenged in court.⁸¹ Several of these challenges have been successful.⁸² BOEM has the discretion under existing law to revise the regulations governing the preparation of five-year OCS oil and gas leasing programs so that they provide useful guidance.

1. *More Effective Description of the Factors to be Considered Under OCSLA Section 18(a)(2)*

OCSLA Section 18(a)(2) specifies that the “[t]iming and location of exploration, development, and production of oil and gas among the oil- and gas-bearing physiographic regions of the [O]uter Continental Shelf shall be based on a consideration of” nine enumerated factors.⁸³ There is, however, no meaningful regulatory interpretation of the manner in which the agency should evaluate these factors. Some of the factors are considered quantitatively, others only qualitatively. More specific regulatory guidance would foster more consistent and transparent decisions and would help prevent uncertainty and controversy.

For example, Section 18(a)(2)(B) requires consideration of “an equitable sharing of developmental benefits and environmental risks among the various regions.”⁸⁴ BOEM seeks to meet this obligation using

79. Compare 43 U.S.C. § 1344(c)(1) (2012) with 30 C.F.R. § 556.16(a) (2012).

80. 43 U.S.C. § 1344(a).

81. See, e.g., LeVine, Van Tuyn & Hughes, *supra* note 4, at 1315, 1317, 1323, 1342 (describing legal challenges to five-year OCS leasing programs issued in 1980, 1982, 1986, 2007, and 2012). See also U.S. DEP’T. OF THE INTERIOR, BOEM, OUTER CONTINENTAL SHELF OIL AND GAS LEASING PROPOSED PROGRAM 2017–2022 2-7, 2-8 (2016) (describing legal challenges) [hereinafter BOEM, PROPOSED PROGRAM 2017–2022].

82. See, e.g., BOEM, PROPOSED PROGRAM 2017–2022, *supra* note 81, at 2-7 to 2-8 (describing legal challenges).

83. § 1344(a)(2).

84. *Id.* § 1344(a)(2)(B).

a net benefits calculation.⁸⁵ However, the manner in which BOEM has undertaken this calculation has not always been transparent, which has resulted in allegations that the agency obscured the specific costs faced by individual regions and in legal challenges.⁸⁶ Regulations could define the factors and data the agency will consider in its “equitable sharing” calculus, require transparent disclosure of the gross costs and benefits experienced by each individual region (as well as onshore regions) of various leasing or “no sale” options, and establish guidelines for the net benefits calculation that would draw on the best available scientific and economic information.

Similarly, OCSLA Section 18(a)(2)(G) requires BOEM to consider “the relative environmental sensitivity and marine productivity of different areas of the [O]uter Continental Shelf.”⁸⁷ In developing the 2007–2012 five-year program, BOEM relied entirely on one study of coastal areas to meet this obligation. This approach was eventually invalidated by the U.S. Court of Appeals for the D.C. Circuit.⁸⁸ Regulations that more explicitly define how to consider “relative environmental sensitivity and marine productivity” would help BOEM carry out its legal mandate more effectively.

2. *Better Direction for the Balancing Required Under OCSLA Section 18(a)(3)*

OCSLA Section 18(a)(3) requires the Secretary to “select the timing and location of leasing, to the maximum extent practicable, so as to obtain a proper balance between the potential for environmental damage, the potential for the discovery of oil and gas, and the potential for adverse impact on the coastal zone.”⁸⁹ The agency has interpreted this obligation as a balance among the nine factors enumerated in Section 18(a)(2).

At present, there are no regulations to help BOEM find the right balance between the risk of harm to the environment and potential

85. See, e.g., U.S. DEP’T. OF THE INTERIOR, BOEM, PROPOSED FINAL OUTER CONTINENTAL SHELF OIL AND GAS LEASING PROGRAM 2012–2017 116–19 (June 2012) (explaining BOEM’s “benefit-cost analysis”) [hereinafter BOEM, PROPOSED FINAL PROGRAM 2012–2017]. See also BOEM, PROPOSED PROGRAM 2017–2022, *supra* note 81, at 8-1 to 8-25 (explaining BOEM’s “equitable sharing considerations”).

86. See, e.g., *Ctr. for Sustainable Econ. v. Jewell*, 779 F.3d 588 (D.C. Cir. 2015); *Ctr. for Biological Diversity, et al. v. Dep’t of the Interior*, 563 F.3d 466 (D.C. Cir. 2009).

87. § 1344(a)(2)(G).

88. See *Ctr. for Biological Diversity*, 563 F.3d at 489 (requiring more complete analysis to identify most and least sensitive environmental areas).

89. § 1344(a)(3).

benefits from the pursuit of oil and gas. As a result, when explaining its approach to balancing in the 2012–2017 five-year program, BOEM has resorted to quoting extensively from the D.C. Circuit’s opinions evaluating challenges to its earlier balancing efforts.⁹⁰ Instead of reacting to court challenges, BOEM should promulgate its own regulations to provide guidance and standards that promote consistency and ensure compliance with the statute’s balancing mandate.

At times, BOEM has balanced its Section 18(a) considerations through a cost-benefit analysis, an approach endorsed by the D.C. Circuit⁹¹ and arguably required by Executive Orders.⁹² At the same time, BOEM has also asserted that Section 18(a)(3) balancing cannot be reduced to a formula:

[s]triking this balance based on a consideration of the principles and factors enumerated in section 18(a) is a matter of judgment for which no ready formula exists. Section 18 requires the consideration of a broad range of principles and factors rather than imposing an inflexible formula for making decisions.⁹³

Even if an “inflexible formula” is not appropriate, the critical balancing would nonetheless benefit from regulatory guidance. Effective regulations could require consideration of specific factors and the use of certain methods that would help decision-makers as they evaluate and balance the relevant information. For example, when considering the potential for environmental damage or adverse impacts on the coastal zone, regulations could require BOEM to consider factors including, but not limited to:

- the degree to which scientists understand the marine ecosystem and its capacity to absorb impacts that could result from OCS development;
- the presence or absence of unique or endemic species that could be affected by OCS oil and gas operations;
- other stressors, beyond new oil and gas activity, that affect ecosystem functioning or resilience; and
- the degree to which spill response operations could be

90. BOEM, PROPOSED FINAL PROGRAM 2012–2017, *supra* note 85, at 191–93.

91. *State of Cal. By & Through Brown v. Watt*, 668 F.2d 1290, 1317–18 (D.C. Cir. 1981) (finding it “reasonable to conclude that within the section’s proper balance there is some notion of ‘costs’ and ‘benefits’”).

92. Michael A. Livermore, *Patience is an Economic Virtue: Real Options, Natural Resources, and Offshore Oil*, 84 U. COLO. L. REV. 581, 627 (2013).

93. *Id.* at 588. In the Proposed 2017–2022 Program, BOEM similarly states, “[OCSLA] does not specify what the balance should be or how the factors should be weighed to achieve that balance, leaving to the Secretary the discretion to reach a reasonable determination under the existing circumstances.” BOEM, PROPOSED PROGRAM 2017–2022, *supra* note 81, at 2–5.

precluded by adverse environmental or weather conditions.

Regulatory interpretation of Section 18(a)(3) that requires consideration or use of particular factors or methods would help remove at least some of the uncertainty that has plagued past balancing efforts.

3. *Provide Direction on When and How to Account for Option Value in the Planning and Leasing Process*

Regulations should also mandate consideration of option value in the five-year planning process and describe how to conduct this analysis. In this setting, option value means the value of waiting for more information on energy prices and extraction risks before deciding whether or when to offer for lease the public's energy resources to private companies.⁹⁴ The concept's most familiar application is in the financial markets, where investors calculate the value of options to wait for more information on stock prices before deciding whether to buy or sell shares.⁹⁵ The same methodology can be applied to "environmental, social, and technological uncertainties."⁹⁶

Option value is applicable to the decisions made at the five-year planning stage, as well as the lease sale stage (as described below). At the planning stage, BOEM can account for differences in environmental and social uncertainties among the OCS regions to allow for more effective regional comparisons.⁹⁷

In fact, BOEM's failure to consider option value at the planning stage was one of the subjects of a challenge to the agency's 2012–2017 five-year program.⁹⁸ In that case, the petitioner argued that OCSLA required BOEM to explicitly consider and quantify the option value of delaying leasing in specific regions of the OCS. The D.C. Circuit ultimately upheld the 2012–2017 program, finding that quantification techniques were "not yet so well established that [BOEM] was required to use them" in the planning process. However, the court recognized 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."⁹⁹ The D.C. Circuit's ruling "strongly suggests that future advancements in option value research could compel the agency to better quantify the

94. Livermore, *supra* note 92, at 627.

95. FOLEY HEIN, HARMONIZING PRESERVATION, *supra* note 56, at 13.

96. *Id.*

97. See 43 U.S.C. § 1344(a)(2)(G) (requiring consideration of relative sensitivity of different areas of the OCS).

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

99. *Id.*

option value associated with its leasing practices, which could pay enormous dividends to the American people by prioritizing lower-risk leasing and securing more favorable financial terms.”¹⁰⁰

BOEM recognized the importance of a more robust discussion of option value in its most recent proposed five-year program. For the first time, the agency includes some qualitative discussion of option value.¹⁰¹ However, it stopped short of a full quantitative analysis of the value of waiting for more information on oil prices and environmental costs before scheduling lease sales.¹⁰²

It is notable that BOEM adjusted its analysis to reflect the best available information and economic tools. The fact that the agency had to be challenged in court to do so, however, underscores the advantages that could be gained by crafting effective regulations that encourage or require the use of the best available analytical tools.

4. *Require Identification of Important Marine Areas and Adequate Baseline Scientific Information*

To ensure that decision-makers have a strong understanding of the ocean environments that may be affected by their choices, BOEM’s regulations should guarantee that certain information is available before an area can be included in a five-year program. At the broadest level, the availability of specific baseline scientific information will ensure informed decision-making. For example, a quantitative understanding of the marine environment, including robust food web models and identified important ecological areas, will help more fully evaluate choices about the potential effects of oil and gas operations on the OCS. Regulations should specify that, unless and until such data is available for a given area of the OCS, that area should not be made available for leasing in a five-year program.

In addition, at the five-year program stage, identification of important marine areas within each region, as well as measures necessary to preserve the integrity and function of those important areas, will help ensure good planning decisions. Important marine areas may include areas of high productivity or diversity; areas that are important for feeding, migration, or the lifecycle of species; areas of biogenic habitat, structure forming habitat, or habitat for endangered or threatened species; or areas important for subsistence purposes. If

100. Comments from Jayni Foley Hein, et. al., Inst. for Pol’y Integrity at NYU School of Law, to BOEM (Mar. 30, 2015), http://policyintegrity.org/documents/Comments_to_BOEM_2017-2022_Offshore_Program.pdf.

101. BOEM, PROPOSED PROGRAM 2017–2022, *supra* note 81, at 10-2 to 10-13.

102. *Id.*

necessary to preserve ecological integrity and functioning, regulations should require that important marine areas be excluded from the five-year program.

President Obama has recognized the value of this approach. In January 2015, he signed a Presidential Memorandum withdrawing from oil and gas leasing several important areas in the U.S. Arctic Ocean: Hanna Shoal, Barrow Canyon, a 25-mile buffer along the Chukchi coast, and two smaller subsistence-use areas in the Beaufort Sea.¹⁰³ In issuing this memorandum, the President exercised his authority under OCSLA Section 12(a).¹⁰⁴

BOEM has built on this approach in the Proposed 2017-2022 Program. The agency has identified a series of “Environmentally Important Areas,” in the Beaufort and Chukchi Seas.¹⁰⁵ The agency has identified particular values of these areas and intends the evaluation in the program and accompanying EIS “to serve as a foundation to inform future analysis and related leasing decisions concerning these environmentally important areas.”¹⁰⁶ Regulations specifically requiring protection of disproportionately important areas would continue this momentum and ensure that BOEM takes proactive steps during the five-year planning process to protect such areas.¹⁰⁷

Once important areas are identified, they must also be protected. Regulations, therefore, should impose specific, stringent precautions that must be in place before the sale of any OCS leases that could be reasonably expected to impact important marine areas. These rules would help protect areas in which leasing is prohibited and ensure the ongoing health of areas where leasing is not prohibited but where specific ecosystem functions merit other forms of protection. For example, operators could be required to locate exploration and development activities within lease blocks so that they minimize the potential for sound and other impacts to important areas. Requirements like these would help BOEM better meet its balancing obligations and ensure authorized activities will not harm the health and functioning of the marine ecosystem.

103. Memorandum on the Withdrawal of Certain Areas of the United States Outer Continental Shelf Offshore Alaska from Leasing Disposition, 2015 DAILY COMP. PRES. DOC. 59 (Jan. 27, 2015).

104. *Id.*

105. BOEM, PROPOSED PROGRAM 2017-2022, *supra* note 81, at 4-1, 11-1 to 11-3.

106. *Id.*

107. *See, e.g.*, Stan Senner, et al., Comment Letter on 2017-2022 Proposed Oil and Gas Leasing Program and Environmental Impact Statement (Mar. 30, 2015), <http://www.regulations.gov/#!documentDetail;D=BOEM-2014-0096-14343>.

5. *Codify the “Targeted Approach” to OCS Leasing for Frontier Areas*

In its 2012–2017 program, BOEM introduced a “targeted approach” to OCS leasing in the U.S. Arctic Ocean.¹⁰⁸ BOEM has continued that approach in the Proposed 2017–2022 Program.¹⁰⁹ Instead of opening an entire program area to OCS leasing, BOEM’s targeted approach excludes areas of lower petroleum potential that have high environmental or ecological importance. BOEM can refine and codify this “targeted” approach to leasing in its five-year program regulations.

The area-wide leasing approach that BOEM has followed since the 1980s is not mandated by OCSLA or BOEM’s existing regulations. It is a relic of former Secretary of the Interior James Watt’s commitment to “lease one billion acres” offshore.¹¹⁰ The area-wide approach, in which tens of millions of acres may be offered in single lease sales, makes effective environmental analysis very difficult, may limit competition, and seems to serve a limited political purpose for many areas in which there appears to be little industry interest or capability.

A targeted leasing approach has substantial benefits, and BOEM can take steps to codify it in regulation. Without a formal rulemaking, it is possible that future administrations would eliminate targeted leasing in the Arctic and continue area-wide leasing elsewhere. Exclusion of important marine areas to preserve ecological integrity and functioning, as described above, could be an important component of this approach. Currently, BOEM begins from the premise that an entire planning area will be included in the program and requires specific justification for removing areas. Regulations could reverse this premise and allow leasing only in areas in which potential benefits can be shown to outweigh risks. BOEM regulations could also consider placing an upper limit on the percentage of an OCS planning area that may be included in any one five-year leasing program.

Limiting the geographic scope of lease sales—for example by codifying BOEM’s “targeted approach” to leasing—would have the additional benefit of fostering more meaningful environmental NEPA analysis at the lease sale stage. It may also increase competition among companies for individual lease blocks.

108. BOEM, PROPOSED FINAL PROGRAM 2012–2017, *supra* note 85, at 5-6.

109. BOEM, PROPOSED PROGRAM 2017–2022, *supra* note 81, at S-5.

110. NAT’L COMM’N, DEEP WATER, *supra* note 37, at 63.

C. Lease Sales

The regulations that apply to the lease sale stage of the OCSLA process have significant shortcomings. Several of the changes highlighted above—including those related to codifying the targeted leasing approach, defining areas to be excluded from leasing, and improving NEPA compliance—would substantially improve the regulations at this stage of the process as well. In addition, BOEM could take additional steps to modernize its OCS leasing regulations.

1. *Require Consideration of Option Value in Setting Fiscal Terms for Lease Sales*

In addition to accounting for option value during the planning stage, BOEM should account for the value of the government's option to wait to sell leases when setting minimum bids for lease tracts.¹¹¹ In its proposed program for 2017–2022, BOEM discusses the possibility of raising minimum bids in lease sales to account for option value. BOEM notes that raising the minimum bid may increase buyer selectivity, elevating “the efficiency of the lease sale process.”¹¹² BOEM's five-year program also includes a “hurdle price analysis,” an economic method used to calculate the tipping point for particular investments. At the program development stage, BOEM uses the hurdle price to identify areas that show current economic promise, while deferring other timing, composition, and sale design decisions to the lease sale stage.¹¹³ For the first time, BOEM's proposed program for 2017–2022 added an estimate of the known environmental and social costs into the hurdle price calculation and now considers both the private and social costs of exploration and development in determining the hurdle price.¹¹⁴ This is a positive step; however, BOEM's application of the hurdle-price analysis fails to account for environmental and social cost uncertainty, which is also relevant to optimal timing and would help ensure a more fair return to the public.¹¹⁵

111. Livermore, *supra* note 92, at 630.

112. BOEM, PROPOSED PROGRAM 2017–2022, *supra* note 81 at 10–20. *See also* FOLEY HEIN, HARMONIZING PRESERVATION, *supra* note 56, at 15 (discussing the need for BOEM to raise minimum bids).

113. BOEM, PROPOSED PROGRAM 2017–2022, *supra* note 81 at 10–13.

114. *Id.* at 10–12, 10–14.

115. *See* FOLEY HEIN, HARMONIZING PRESERVATION, *supra* note 56 at 15–17; Comments from Jayni Foley Hein et al., Inst. for Pol'y Integrity at NYU School of Law, to BOEM (Mar. 30, 2015), http://policyintegrity.org/documents/Comments_to_BOEM_2017-2022_Offshore_Program.pdf (“BOEM can calculate a ‘social hurdle price’ by modifying the agency's existing dynamic programming model to include

Promulgating regulations relating to economic analysis of OCS lease sales would clarify and modernize BOEM's analytical methods and have significant benefits for the agency. Updating regulations to account for option value would likely increase revenue to the federal government, make lease sales more equitable, and allow BOEM to prevent potential litigation.

2. *Promulgate Rent and Royalty Provisions that Account for Externalities*

Oil and gas operations result in significant air, water, and noise pollution, among other impacts. In addition, these activities can contribute both directly and indirectly to climate change, through "upstream" emissions associated with oil and gas operations and through "downstream" emissions from the burning of fossil fuels.¹¹⁶ Often, companies do not pay for the full cost of these impacts—also known as externalities, or shared costs borne by third parties—because these costs do "not rise to the level of actionable legal claims,"¹¹⁷ and other policy tools that could help internalize these costs, like a national carbon tax, are not currently in place. Cumulatively, however, these costs are significant and quantifiable.¹¹⁸ For example, the Environmental Protection Agency (EPA) and other federal agencies use the social cost of carbon to estimate the climate benefits of rulemakings.¹¹⁹ BOEM estimates that offshore leases under its 2012–2017 program could generate up to 148 million tons of carbon dioxide-equivalent emissions;¹²⁰ the current social cost of carbon is about \$40 per ton of greenhouse gases emitted in 2015.¹²¹ Cumulatively, accounting for these

externalities associated with drilling and the corresponding uncertainty underlying them . . .").

116. Jessica Goad & Matt Lee-Ashley, *The Clogged Carbon Sink: U.S. Public Lands Are the Source of 4.5 Times More Carbon Pollution Than They Can Absorb*, CTR. FOR AMERICAN PROGRESS (Dec. 5, 2013), <https://www.americanprogress.org/issues/green/news/2013/12/05/80277/the-clogged-carbon-sink-u-s-public-lands-are-the-source-of-4-5-times-more-carbon-pollution-than-they-can-absorb/>.

117. FOLEY HEIN, HARMONIZING PRESERVATION, *supra* note 56, at 18.

118. *Id.*

119. U.S. ENVTL. PROT. AGENCY, *The Social Cost of Carbon* (last updated Dec. 11, 2015), <http://www3.epa.gov/climatechange/EPAactivities/economics/scc.html>.

120. U.S. DEP'T OF THE INTERIOR, BUREAU OF OCEAN ENERGY MGMT. OUTER CONTINENTAL SHELF OIL AND GAS LEASING PROGRAM: 2012-2017 tbl. 4.4.4-2 (July 2012), http://www.boem.gov/uploadedFiles/BOEM/Oil_and_Gas_Energy_Program/Leasing/Five_Year_Program/2012-2017_Five_Year_Program/2012-2017_Final_PEIS.pdf.

121. INTERAGENCY WORKING GROUP ON THE SOCIAL COST OF CARBON, TECHNICAL UPDATE OF THE SOCIAL COST OF CARBON FOR REGULATORY IMPACT

costs could generate billions of dollars that would help offset climate damages.

BOEM currently does not quantify or charge lessees for these costs. The agency, however, has authority to adjust its rent and royalty provisions to “account for impairment of recreational interests and environmental and social externalities.”¹²² OCSLA contains no specific limit on BOEM’s ability to charge rent,¹²³ and the agency has not specified the manner in which it decides the rental rates for offshore leases. Similarly, OCSLA establishes a minimum royalty rate, but does not impose a ceiling on that rate.¹²⁴

Addressing externalities and more fairly capturing costs is one of the driving factors behind the recently announced review of the federal coal program. Coal royalty rates are also set by regulation, and there is a direct parallel to oil and gas rent and royalty rates, especially as both programs are managed by DOI.

Clarifying the manner in which rental and royalty rates are established would help provide certainty and confidence that the public is receiving fair market value for its resources. In establishing more comprehensive rental and royalty rate regulations, BOEM could specify a methodology through which climate and other quantifiable externalities are paid by the lessee.¹²⁵

D. Approval of OCS exploration plans.

1. *Change the Approach to OCSLA’s Thirty-Day Timeline for Approval of Exploration Plans that have been “Deemed Submitted”*

OCSLA requires BOEM to approve or deny an exploration plan within thirty days of the date on which the exploration plan is “deemed submitted” by the agency.¹²⁶ In the past, BOEM has followed a cramped interpretation of the statute’s 30-day deadline under which it has deferred NEPA analysis of exploration plans until after the agency has deemed the plan submitted. As a result, the agency has either rushed its effort to complete an EA in a short 30-day window¹²⁷ or has skipped

ANALYSIS at 3 (2013) (giving the central estimate of \$38 per ton, in 2007 dollars, for emissions in the year 2015).

122. FOLEY HEIN, HARMONIZING PRESERVATION, *supra* note 56, at 19.

123. *See* 43 U.S.C. § 1337(b)(6) (allowing the Secretary full discretion to prescribe rental provisions at the time the lease is offered).

124. *See id.* § 1337(a) (establishing minimum royalty rates); FOLEY HEIN, HARMONIZING PRESERVATION, *supra* note 56, at 20–23.

125. FOLEY HEIN, HARMONIZING PRESERVATION, *supra* note 56, at 20–23.

126. 43 U.S.C. § 1340(c).

127. *See, e.g.*, Press Release, Bureau of Ocean Energy Management, BOEM

NEPA analysis altogether using categorical exclusions.¹²⁸ BOEM's interpretation of the statutory time limit precludes effective environmental analysis and opportunity for meaningful public comment.

Under a more logical and careful approach, BOEM would complete appropriate NEPA analysis before it deems an exploration plan submitted.¹²⁹ Doing so would allow the time necessary to prepare a new or supplemental EIS or an environmental assessment and would allow time to solicit, review, and incorporate thoughtful public comment. As the National Commission recommended, BOEM "should not consider exploration plans officially 'submitted' until all of the required content, necessary environmental reviews, and other analyses are complete and adequate to provide a sound basis for decision-making."¹³⁰

2. *Make Conditional Approvals Impossible*

OCSLA directs DOI to either approve or deny exploration plans. In interpreting that obligation, DOI has granted "conditional approvals" when exploration plans meet some of the requisite standards but are not yet complete. The conditional approvals state that the plan is approved subject to the company submitting additional information, passing tests, and/or receiving other government approvals.¹³¹ For example, in 2012,

Invites Public Comment to Inform Environmental Assessment and Analysis of Chukchi Sea Exploration Plan (April 10, 2015) *available at* <http://www.boem.gov/press04102015/> (noting BOEM "has 30 calendar days to analyze and evaluate" Shell's 2015 exploration plan for the Chukchi Sea).

128. *See, e.g.,* NAT'L COMM'N, DEEP WATER, *supra* note 37, at 81–82 (describing categorical exclusion of exploration plans in the central and western Gulf of Mexico).

129. *See, e.g.,* Alaska Wilderness League v. Kempthorne, 548 F.3d 815, 834 (9th Cir. 2008) (noting that BOEM is required to undertake a complete environmental analysis under NEPA, and that the agency has flexibility to do so under OCSLA's statutory scheme), *overruled by* Alaska Wilderness League v. Kempthorne, 559 F.3d 916 (9th Cir. 2009).

130. NAT'L COMM'N, DEEP WATER, *supra* note 37, at 262. In the wake of the Deepwater Horizon accident, the Obama administration pointed to the 30-day timeframe as a problem that needed to be addressed. *See, e.g.,* Shashank Bengali, *Obama orders firms to change drill plans that mimic BP's*, MCCLATCHY DC (June 2, 2012), <http://www.mcclatchydc.com/news/politics-government/white-house/article24584410.html>.

131. *See, e.g.,* Letter from David Johnston, BOEM Alaska Regional Supervisor, to Susan Childs, Shell Alaska Venture Support Integrator, Manager (May 11, 2015) (approving Shell 2015 exploration plan subject to certain conditions), http://www.boem.gov/uploadedFiles/BOEM/About_BOEM/BOEM_Regions/Alaska_Region/Leasing_and_Plans/Plans/2015-05-11-Shell-EP-Conditional-Approval.pdf; Press Release, BOEM, BOEM Issues Conditional Approval for Shell 2012 Chukchi Sea Exploration Plan: All Proposed Activities Must Meet New Rigorous Safety and Environmental Standards (Dec. 16, 2011), <http://>

BOEM conditionally approved Shell's exploration plans for the Arctic Ocean before BSEE had approved Shell's oil spill response plans—even though the spill response plan is a required component of the exploration plan.¹³² Similarly, in 2015, BOEM approved Shell's Chukchi Sea exploration plan even though Shell had not yet submitted an approval of its Oil Spill Response Plan, had not received approval for its capping stack or containment system, and had not received needed approvals to harass marine mammals, among other deficiencies.¹³³

The momentum created pursuant to these conditional approvals may make it difficult or impossible for agency staff to change or cancel some or all of the proposed oil and gas operations. In addition, conditional approvals make it more difficult for BOEM and BSEE to ensure that a spill response plan is suitable for the scope of the proposed Exploration Plan. Ultimately, conditional approval undermines the integrity of the approval process, and BOEM should explicitly disallow this practice.

3. *Make Oil Spill Response Plans Subject to Public Review and Comment*

Operators' oil spill response plans should be made subject to public review and comment. "There is a heightened, broad public interest in oil spill response by academics, non-governmental organizations, local government, tribes, and other federal agencies working in the Arctic, particularly after the *Deepwater Horizon* spill and the mishaps of Shell's 2012 drilling season."¹³⁴ Many of these stakeholders have significant technical expertise, local knowledge of coastal conditions or weather patterns, and other information that would benefit agency review of spill plans. Regulations should ensure that stakeholders have an opportunity to share this knowledge so that BOEM, BSEE, and OCS operators can improve the effectiveness of their spill response plans.¹³⁵

www.boem.gov/BOEM-Newsroom/Press-Releases/2011/press12162011.aspx.

132. BOEM, *supra* note 131; Press Release, BOEMRE, BOEMRE Issues Conditional Approval for Shell Exploration Plan for Beaufort Sea: All Proposed Activities Must Meet New Rigorous Safety and Environmental Standards (Aug. 4, 2011), <http://www.boem.gov/BOEM-Newsroom/Press-Releases/2011/press0804a.aspx>.

133. David Johnston, *supra* note 131.

134. Letter from Marilyn Heiman, THE PEW CHARITABLE TRUSTS, Director, U.S. Arctic Program to Janice Schneider, Dep't of the Interior, Assistant Sec'y for Land and Minerals Mgmt. at 7 (May 27, 2015), <http://www.regulations.gov/#!documentDetail;D=BSEE-2013-0011-1099>.

135. BSEE is responsible for review and approval of spill response plans. Because an approved plan is necessary prior to exploration and could be combined with it, we include the public review recommendation here. *See* U.S.

The National Commission recommended joint agency and public review of oil spill response plans, additionally stating that these plans should be made available to the public once they are approved.¹³⁶ Codifying this review will help ensure full and fair public participation. To the extent that revised regulations require an EIS or EA with public review and comment for all exploration plans, stakeholders could review and comment on oil spill response plans as part of the NEPA process. To ensure that the agency is responsive to suggestions for improvement, the regulations could also require BOEM and BSEE to respond to comments and explain whether suggestions were acted upon and the reasoning behind the agency decision.

CONCLUSION AND PATH FORWARD

DOI has made progress toward better governance of OCS oil and gas activities, including important regulatory reforms. To date, however, these reforms have not substantively addressed OCS five-year planning, lease sales, or BOEM's process for reviewing and authorizing exploration activities. With respect to these phases of the OCSLA process, BOEM still relies on outdated regulations that have not kept pace with changes within the industry. These regulations do not reflect new priorities and policies that call for greater transparency, more attention to environmental and social risks, and the use of modern economic tools. Comprehensive reform is needed.

DOI should not lose the momentum it has created by transitioning from MMS to BOEM, BSEE, and ONRR. As BOEM and BSEE finalize the first tranche of regulatory reforms, they should lay the groundwork for broader reform. The approach DOI has taken to evaluating the coal program through a programmatic EIS provides one possible model to guide reform.¹³⁷

Another approach would be for Interior to issue a broad Advance Notice of Proposed Rulemaking (ANPR) to solicit feedback and suggestions for all of its regulations governing OCS management. This is the approach that EPA took, for example, when considering how to best regulate greenhouse gas emissions pursuant to the Clean Air Act

DEP'T. OF THE INTERIOR, BUREAU OF OCEAN ENERGY MGMT., *An Overview of the Assignment of Regulations Between the Bureau of Ocean Energy Management and the Bureau of Safety and Environmental Enforcement* (noting that BSEE retains authority for "all oil-spill related activities"), <http://www.boem.gov/uploadedFiles/ChartBSEEBOEMRegulatoryAuthorities.pdf>.

136. NAT'L COMM'N, *DEEP WATER*, *supra* note 37, at 266-67.

137. *See* Secretarial Order No. 3338, *supra* note 5 (summarizing the DOI's evaluation of the Federal Coal Program and its plans for modernizing it).

following the Supreme Court's decision in *Massachusetts v. EPA*.¹³⁸ The agency has since promulgated a series of targeted emissions controls.¹³⁹ Similarly, in 2015, BLM issued an ANPR to solicit feedback on federal oil and gas fiscal terms.¹⁴⁰ In the same manner, BOEM could issue a broad ANPR covering all of BOEM's regulations, including five-year planning, lease sales, and exploration plan approval.

DOI could then consider a process that incrementally reforms portions of the regulations. This process would take time—each portion of the regulations could easily take a year or more to complete—but that is all the more reason to begin now.

Announcing this type of comprehensive regulatory reform would send a strong signal to oil companies and to the public that DOI intends to keep moving forward with the transition from the old MMS and toward a new way of doing business on the OCS.

138. See generally, *Regulating Greenhouse Gas Emissions Under the Clean Air Act*, 73 Fed. Reg. 44,354 (July 30, 2008).

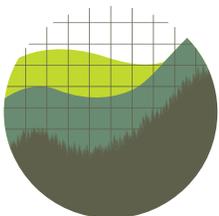
139. See *Regulatory Initiatives*, U.S. ENV'T PROT. AGENCY, <http://www3.epa.gov/climatechange/EPAactivities/regulatory-initiatives.html> (documenting current and forthcoming regulations on emissions).

140. *Oil and Gas Leasing: Royalty on Production, Rental Payments, Minimum Acceptable Bids, Bonding Requirements, and Civil Penalty Assessments*, 80 Fed. Reg. 76 (proposed Apr. 21, 2015) (to be codified at 43 C.F.R. pt. 3100), available at <http://www.regulations.gov/#!documentDetail;D=BLM-2015-0002-0001>.



Priorities for Federal Coal Reform

Twelve Policy and Procedural Goals for the Programmatic Review



Institute for
Policy Integrity

NEW YORK UNIVERSITY SCHOOL OF LAW

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Executive Summary

“Rather than subsidize the past, we should invest in the future—especially in communities that rely on fossil fuels. That’s why I’m going to push to change the way we manage our oil and coal resources, so that they better reflect the costs they impose on taxpayers and our planet.”

– President Barack Obama, State of the Union Address (January 12, 2016)

On January 15, 2016, the Department of the Interior (Interior) announced that it would begin a comprehensive review to identify and evaluate potential reforms to the federal coal program. This review will be conducted as a Programmatic Environmental Impact Statement (Programmatic EIS) that will analyze issues including “how, when, and where to lease; how to account for the environmental and public health impacts of federal coal production; and how to ensure American taxpayers are earning a fair return for the use of their public resources.”¹ Two primary purposes of the review are to evaluate the coal program’s overall return to taxpayers, and to assess the climate change impacts of coal production on federal lands.

The programmatic review presents a critical opportunity to set policy priorities for the future of federal coal. This review has the potential to deliver significant economic and environmental benefits for decades to come, as market conditions, energy infrastructure, scientific understanding, and national priorities have changed considerably since the coal program was last comprehensively reviewed in 1986. Interior is statutorily required to receive “fair market value” for taxpayers when it allows leaseholders to extract valuable natural resources from public lands. Interior must also harmonize energy production with environmental preservation, and protect at least some public lands in their natural condition for future generations.

This report highlights twelve policy and procedural recommendations for the review of the federal coal program. The Programmatic EIS, conducted pursuant to the National Environmental Policy Act (NEPA), must be prepared carefully, transparently, and by using the best economic and modeling tools available. The analysis should provide accurate

Photo © Brian Samson



Coal-burning power plant in Springerville, Arizona.

information on how different royalty rates and coal production scenarios would affect greenhouse gas emissions, revenue, jobs, and energy markets—particularly substitution among energy resources. Interior should pay particular attention to policy changes that it can implement now, without the need for new legislation, in order to secure a more fair return and manage federal energy production to meet 21st Century needs.

In order to modernize the federal coal program, Interior should:

1. Define “fair market value” to mean “net social value,” in order to account for the environmental and social costs of coal production and increase the net return to taxpayers;
2. Prepare a strategic plan for managing the coal program and commit to regular programmatic environmental reviews;
3. Prioritize renewable energy production on federal lands, including on abandoned and reclaimed coal mine lands;
4. Propose a broad range of alternatives for consideration in the Programmatic EIS;
5. Calculate the upstream and downstream greenhouse gas emissions of selected alternatives in this Programmatic EIS and in future project-level reviews;
6. Use the Social Cost of Carbon and Social Cost of Methane to quantify the climate impacts of proposed and alternate leasing scenarios;
7. Evaluate whether the current coal program earns “fair market value” for taxpayers, by conducting a cost-benefit analysis of the current program;
8. Identify optimal fiscal terms for new and modified coal leases by analyzing Social Cost of Carbon and Social Cost of Methane royalty “adders,” among other potential reforms;
9. Analyze viable alternatives that would reconcile the United States’ climate goals with management of coal production on public lands;
10. For each alternative scenario, model its climate impact and effect on coal prices, royalty payments, and energy markets, using sophisticated models that account for substitution effects;
11. Take steps to curb royalty rate reductions, which impair a fair return to taxpayers; and
12. Evaluate bidding and eligibility reforms that can help secure fair market value and reduce risks to taxpayers.

Ideally, this process should lead to a more transparent and rational federal coal program that maximizes social welfare. While the process of preparing the Programmatic EIS is complex, this review has the potential to pay significant dividends to the American public for decades to come, by identifying opportunities to increase revenue, reduce greenhouse gas emissions, and align federal land management with U.S. climate change goals.

Policy and Procedural Goals for the Federal Coal Programmatic Review

These twelve recommendations for the federal coal Programmatic EIS identify opportunities for Interior to better manage the federal coal program, in line with its statutory mandates. The goal of these recommendations is to help Interior run a more strategic and transparent program and to secure maximum net benefits for American taxpayers.

1. Interior Should Define “Fair Market Value” to Mean “Net Social Value,” to Account for the Environmental and Social Costs of Coal Production.

As stated in Secretarial Order 3338, two of the primary goals of the Programmatic EIS are to examine whether the federal coal program “successfully secur[es] a fair return for the American public,” and whether the program “adequately accounts for externalities related to Federal coal production, including environmental and social impacts.”² As a threshold issue, Interior should clarify how it defines “fair market value,” by examining its statutory mandates, legislative history, and modern knowledge of the social and environmental costs of coal production. Consistent with its role as steward of public lands for multiple generations, as well as best practices for agency decision making, Interior should define “fair market value” as “net social value,” as opposed to solely the market value of coal. This definition also accords with President Obama’s call to “change the way we manage our oil and coal resources, so that they better reflect the costs they impose on taxpayers and our planet.”

The Federal Land Policy and Management Act requires that the United States “receive fair market value of the use of the public lands and their resources unless otherwise provided for by statute.”³ The Federal Coal Leasing Amendments Act of 1976 likewise specifies that no bid may be accepted which is less than “the fair market value, as determined by the Secretary, of the coal subject to the lease.”⁴ The term “fair market value” is not defined in either statute. In 1982—the last time that Interior convened a working group to comprehensively review its fair market value procedures—the task force determined that “fair market value” was not merely the value of the resource discovered or produced, but the value of “the right” to explore and, if there is a discovery, to develop and produce the energy resource.⁵ Indeed, the Federal Land Policy and Management Act refers to the value of using the lands, and not solely to the value of the resources.

The Mineral Leasing Act of 1920 does not contain an explicit “fair market value” requirement. However, it states that the Secretary of the Interior can include coal, oil, or natural gas lease terms that she or he deems necessary “to insure the sale of the production of such leased lands to the United States and to the public at reasonable prices, *for the protection of the interests of the United States*, for the prevention of monopoly, and for the *safeguarding of the public welfare*.”⁶

This fair market value requirement should also be interpreted in light of the Federal Land Policy and Management Act’s statutory mandate for Interior to harmonize energy production with conservation,⁷ and to protect public lands for the benefit of future generations.⁸ A robust definition of “fair market value” that maximizes social welfare should account for the market price of the coal resource as well as the social and environmental cost of mining—the cost to American taxpayers of mining on public lands due to non-internalized externalities (costs borne by the public at large, not by the responsible party or polluter).⁹

Failure to account for the externality cost of coal production amounts to a subsidy for coal producers, as the public bears the burden of mitigation and adapting to such costs, including greenhouse gas emissions—the effects of which will continue to be felt decades from now. In other words, failure to account for the environmental costs of coal production prioritizes short-term coal company profits over long-term taxpayer welfare.¹⁰ Fortunately, this oversight can be corrected by using modern economic tools like the Interagency Working Group’s Social Cost of Carbon and Social Cost of Methane, which quantify the economic damages associated with a small increase in emissions, conventionally one metric ton, in a given year.¹¹

Interior should clarify that “fair market value” for coal and other natural resources should be defined with respect to net social value (or net benefits). Fair market value, then, can be measured by weighing the benefits and costs of coal leasing and production, and analyzing the net return to taxpayers. In order to provide fair market value, at minimum, federal coal leasing should provide net benefits to taxpayers. And ideally, leasing decisions should be calibrated to maximize net benefits.

This definition of “fair market value” accords with the concept of “net social value,” which is used by Interior’s Bureau of Ocean Energy Management (BOEM) to balance economic, environmental, and social values when managing offshore oil and gas leasing, as required pursuant to Section 18(a)(1) of the Outer Continental Shelf Leasing Act (OCSLA).¹² The D.C. Circuit Court of Appeal has upheld BOEM’s methodology for calculating net social value, which uses a cost-benefit analysis that begins by calculating of each planning area’s “net economic value” (the market value of expected resources less the cost of production and transportation) minus environmental and social costs.¹³ BOEM then compares the net benefits of producing oil and gas from the program areas to the net benefits of the “no leasing” alternative to calculate the incremental net benefits of including each area in the program.¹⁴

Interior should review its “fair market value” procedures and issue guidance in line with a “net social value” definition. “Fair market value” requires analysis of all of the quantifiable costs and benefits of coal production; not solely the market price of the coal resource. In addition, through the PEIS, Interior should explore how to account for the social and environmental costs of coal production through adjustments to federal lease fiscal terms, such as royalty rates. Several of these potential reforms are discussed below. Implementing such reforms would likely have the effect of reducing production on more marginal tracts, where the cost of production outweighs the benefits.

This social welfare-maximizing framework is also consistent with executive orders for agency decision-making. For important regulatory actions, Executive Order 12,866 requires agencies to conduct a benefit-cost analysis that includes the benefits and costs anticipated from the action, including “the protection of the natural environment,” on the benefit side of the ledger and any adverse effects on “health, safety, and the natural environment,” on the cost side.¹⁵ The White House Office of Management and Budget (OMB) Circular A-4 also provides best practices for agencies conducting cost-benefit analysis, including comprehensive analysis and monetization to the fullest extent possible.¹⁶ Executive Orders 13,563 and 12,866, OMB Circular A-4, and EPA’s guidelines for economic analysis each indicate that, where all benefits and costs can be quantified and expressed in monetary units, cost-benefit analysis provides decision makers with a clear indication of the most efficient alternative, that is, the alternative that generates the largest net benefits to society.¹⁷ While most commonly applied to regulatory impact analysis, the principles that inform executive level review provide a set of best-practices that should inform natural resources leasing and extraction decisions.¹⁸

Moreover, there is a strong argument based on the legislative history of the Federal Land Policy and Management Act and Federal Coal Leasing Amendments Act that defining “fair market value” from a social welfare maximizing perspective—

and accounting for the cost of environmental and social externalities to justify a royalty rate increase—falls squarely within Interior’s discretion. In 1970, the congressionally-established, bipartisan Public Land Law Review Commission recommended that all federal lands be retained in federal ownership unless disposal to private parties would achieve a greater benefit and provide equitable compensation if the use is interrupted. In establishing guidelines for public land management, the Commission stated, “[t]he end result, of course, is to achieve the maximum benefit for the general public”¹⁹ Congressional testimony leading up to the passage of the Federal Land Policy and Management Act reveals support for revenue sharing provisions that would direct a portion of the revenue from fossil fuel production to the states where the production occurs in order to “help county government[s] cope with energy development impact problems.”²⁰

In addition, the legislative history of the Federal Coal Leasing Amendments Act of 1976 reflects a concern that states be paid a greater share of federal coal royalties to account for social and environmental externalities.²¹ The Act increased the state share of revenue from federal coal royalties, provided that the state share of revenue be used by “giving priority to those subdivisions of the State socially or economically impacted by development of minerals leased under this Act, for (i) planning, (ii) construction and maintenance of public facilities, and (iii) provision of public service”²² Thus, the Act directly links receipt of production revenues to compensation for the social and environmental costs of mineral production.

Furthermore, coastal states and their congressional representatives have repeatedly advocated for a greater share of offshore oil and natural gas revenue, due to significant impacts on coastal infrastructure and the environment.²³ According to coastal producing states, these revenues are needed to mitigate environmental impacts and to maintain the necessary support structure for the offshore oil and gas industry.²⁴ Moreover, the Gulf of Mexico Energy Security Act of 2006 directs coastal states to use their share of royalty payments from offshore drilling for “the purposes of coastal protection, including conservation, coastal restoration, hurricane protection, and infrastructure directly affected by coastal wetland losses,” and “[m]itigation of damage to fish, wildlife, or natural resources,” among other delineated uses.²⁵

In sum, Interior should clarify that “fair market value” for the lease and production of federal coal should be defined with respect to net social value. Fair market value can be measured in this PEIS and in future leasing decisions by weighing the benefits and costs of coal leasing and production, and analyzing the net return to taxpayers. These recommendations are explored in more detail below.

2. Interior Should Prepare a Strategic Plan for the Coal Program and Commit to Regular Programmatic Reviews.

The federal coal PEIS seeks to examine “whether the currently regulatory framework should be changed to provide a better mechanism or mechanisms to decide which coal resources should be made available and how the leasing process should work.”²⁶ Due to persistent problems with uncompetitive leasing, Interior should prepare a strategic plan for the federal coal program that allows it to exert more control over how, when, and where federal coal leasing occurs. In addition, it should set a schedule for conducting regular programmatic review of the coal program.

The Mineral Leasing Act of 1920 and Federal Coal Leasing Amendments Act of 1976 require that federal coal leases be offered competitively.²⁷ The Federal Coal Leasing Amendments Act also modified the Mineral Leasing Act to clarify that Interior is authorized to “divide any lands subject to this Act which have been classified for coal leasing into leasing tracts of such size as he finds appropriate and *in the public interest*.”²⁸ But for decades, the Bureau of Land Management

(BLM) has run a noncompetitive program that effectively cedes control to coal companies over where and when to lease. Moreover, Interior does not conduct a regular programmatic review of the coal program. The result is a non-competitive program that does not adequately serve the public interest.

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.²⁹ From 1990 to 2012, 96 coal tracts were leased with only a single bidder; 10 tracts were leased in sales with two bidders.³⁰ This lack of competition can be traced back to Interior’s decertification of the Powder River Basin as a “coal production region” in 1990. In certified coal production regions, BLM is required to identify potential lease tracts and determine how much total coal should be leased in a region.³¹ By decertifying the Powder River Basin, Interior ushered in the modern practice of “leasing by application.”³² In this manner, Interior abdicated much of the lease planning process, allowing coal companies to select tracts for development, rather than having to follow a regional leasing plan—as called for in the Federal Coal Leasing Amendments Act of 1976.³³

Leasing by application allows private coal companies to design lease boundaries (subject to BLM land use screening and environmental review prior to lease sales³⁴); this perpetuates problems of noncompetitive leasing and opportunistic expansion via lease modifications.³⁵ Further, leasing by application allows companies to decide where it is privately optimal to locate a mine, rather than where it is socially optimal, which is likely to be different, given environmental externalities and other factors. Compounding this issue, the Energy Policy Act of 2005 increased the amount of land that can be added to an existing lease through noncompetitive lease modification from 160 acres to 960 acres.³⁶ BLM approved 45 lease modifications from 2000 to 2013.³⁷

Interior should retake control over how, when, and where federal coal leasing occurs. As part of this reform, Interior should eliminate leasing by application. It should, instead, prepare a strategic plan for any future coal leasing, with projections extending multiple years into the future. This strategic plan should be harmonized with existing Regional Management Plans and account for factors such as: the optimal timing of lease sales; tract size; tract location; expected recoverable coal reserves; the expected market value of the coal produced; other potential uses of federal land; and the environmental and social impacts of leasing. This strategic plan should also evaluate whether leasing in any identified region is expected to provide net public benefits, as compared to not offering the tracts for lease. Through this planning process, Interior should also seek to minimize conflicts with other land values, such as conservation, recreation, and other market uses, including grazing and renewable energy development (discussed immediately below).

Interior should also set a regular schedule for programmatic environmental reviews of the coal program, such as every five or eight years. Conducting this analysis every 30 years is woefully inadequate to keep pace with evolving scientific knowledge of environmental impacts and their costs. A regular schedule for programmatic environmental reviews would increase transparency and accountability with respect to issues like greenhouse gas emissions. This environmental review would complement Interior’s strategic plan, as it would analyze proposed leasing scenarios and their environmental and social impacts.

One model for how such a program could operate is the Bureau of Ocean Energy Management’s five-year planning process for offshore oil and gas leasing. As required by the Outer Continental Shelf Lands Act, BOEM prepares a five-year Program that establishes a schedule of oil and gas lease sales proposed for planning areas of the U.S. Outer Continental Shelf (OCS). The Program specifies the size, timing, and location of potential leasing activity that the Secretary of the Interior determines will best meet national energy needs.³⁸ And as highlighted above, BOEM calculates the projected net benefits of leasing in each identified region, as compared to not offering any tracts for lease. Because the implementation

of the five-year Program may have economic, social, or environmental impacts, BOEM also prepares an environmental analysis pursuant to NEPA for each Program. The Programmatic EIS analyzes the potential environmental impacts of the activities that may result from the lease sale schedule as identified in BOEM's Draft Program; considers a reasonable range of alternatives to the proposed lease sale schedule (including a "no sale" option); and identifies potential opportunities for mitigation.³⁹

Interior need not adopt an identical five-year program for the federal coal program. However, the goal is to exert more control over where, when, and on what terms any leasing occurs, in order to run a more competitive program that appropriately balances federal land uses and provides maximum net benefits to the American public. Preparing a strategic plan will enable Interior to better weigh the trade-offs between competing uses of federal lands; monitor changing market conditions; regularly evaluate lease timing and fiscal terms; and provide clarity to coal companies and other stakeholders. In addition, the agency should commit to regular programmatic environmental reviews in order to analyze viable alternatives and their environmental and social impacts.

3. Interior Should Prioritize Renewable Energy Production on Federal Lands, Including on Abandoned Coal Mine Lands, and Identify Opportunities for Job Retraining for Potentially Displaced Coal Workers.

As part of a strategic planning process, Interior should identify opportunities to preserve renewable energy production potential and accelerate the transition to renewable energy production on federal lands. Interior should direct any future coal leasing away from areas with strong renewable energy potential; identify new opportunities to use abandoned or reclaimed mine lands as renewable energy production sites; and work with partner agencies to assist in retraining coal workers for the renewable energy industry. In this manner, Interior's planning process can harmonize with federal renewable energy development and climate change goals.

In the Energy Policy Act of 2005, Congress directed the Secretary of the Interior to "seek to have approved non-hydro-power renewable energy projects located on public lands with a generation capacity of at least 10,000 MWs of electricity by 2015."⁴⁰ In 2009, the Secretary issued an order establishing renewable energy as a priority for the Department and establishing a task force to develop a strategy to increase the development and transmission of renewable energy on public lands.⁴¹ In 2011, President Obama asked federal agencies to double renewable energy generating capacity by the end of the year.⁴² And in 2016, Democratic Presidential Candidate Hillary Clinton announced a plan to "make public lands an engine of our clean energy economy through a ten-fold increase in renewable energy production on public lands and waters within ten years."⁴³

There is significant renewable energy potential on BLM-managed federal lands, including in historical "coal states" and on abandoned and reclaimed mine lands.⁴⁴ BLM manages over 19 million acres of federal lands in six states with solar energy production potential, including lands in Arizona, California, Colorado, Nevada, New Mexico, and Utah.⁴⁵ BLM manages more than 20 million acres of public lands with wind potential.⁴⁶ For example, an estimated 43 percent of public lands in Wyoming have wind energy development potential.⁴⁷ On federal lands, the potential for energy from wind sources is as high as 350,000 megawatts (MW).⁴⁸



A wind farm in California.

Since 2009, BLM has approved projects amounting to 9,763 MWs of solar energy capacity, 4,767 MWs of wind energy capacity, and 605 MWs of geothermal, for a total of 15,134 MWs of additional approved capacity.⁴⁹ These efforts will continue into 2016 and 2017, when BLM will evaluate seven additional renewable energy projects, five of which are solar.⁵⁰ These projects have the potential to produce an additional 1,337 MWs — enough energy to power more than 400,000 homes.⁵¹

However, federal agencies face hurdles in establishing such projects due to NEPA obligations,⁵² legal challenges,⁵³ transmission limitations, and more.⁵⁴ Interior has taken several steps to overcome these obstacles, such as preparing programmatic EISs for both solar and wind energy development on public lands⁵⁵ and designating seventeen “solar energy zones” for future solar development.⁵⁶ Working with the Departments of Agriculture, Commerce, Defense, Energy, Interior has also expedited the permitting of electricity transmission in designated “energy corridors,” which helps facilitate the delivery electricity generated by renewable power systems to load centers.⁵⁷

Interior should build on these efforts by identifying opportunities to accelerate the transition from coal and other fossil fuel production to renewable energy production on federal lands. Interior should direct future coal leasing away from such areas whenever possible, which it can do through the strategic planning process recommended above, as well as through preparation of Regional Management Plans and identification of additional solar and wind energy zones. In addition, Interior should identify more opportunities to use abandoned or reclaimed mine lands as renewable energy production sites, as EPA does through its RE-Powering America’s Land Initiative.⁵⁸ If such sites can be identified early, reclamation could potentially be managed with future renewable energy production in mind.

In addition, Interior should collaborate with partner agencies to identify opportunities to retrain displaced or potentially displaced coal workers for the renewable energy industry. While coal mining jobs have steadily declined over the last decade,⁵⁹ both solar and wind are projected to experience continued job growth. For example, the solar industry is projected to increase by 14.7 percent to 240,000 workers in the next year.⁶⁰

President Obama’s POWER+ Plan, launched in 2016, provides dedicated new resources for economic diversification, job creation, job training and other employment services for workers and communities impacted by layoffs at coal mines and coal-fired power plants.⁶¹ Twenty million dollars is designated for dislocated coal mine workers. Retraining dislocated coal miners to work in solar and wind energy development can be a focus area of these programs. In fact, the Department of Energy recently announced a goal “to train 75,000 people to enter the solar workforce by 2020.”⁶² Interior should collaborate with partner agencies like the Departments of Energy and Labor to identify promising locations for job training programs, based on its knowledge of coal production trends, potential job impacts, and appropriate locations for renewable energy production.

4. In the Programmatic EIS, Interior Should Propose a Broad Range of Alternatives, Including the Alternative of No New Coal Leasing.

In order to thoroughly evaluate the array of issues called for in Interior’s Secretarial Order—such as climate impacts, externalities, and a fair return—Interior should evaluate a broad range of alternatives in its Programmatic EIS. This will enable Interior to model and analyze several different coal leasing scenarios and their resulting environmental, economic, and social effects.

Analysis of reasonable alternatives is the heart of environmental impact statements.⁶³ For project-level reviews, NEPA requires federal agencies to “rigorously explore and objectively evaluate all reasonable alternatives,” including the “no action” alternative.⁶⁴ Agencies must “[d]evote substantial treatment to each alternative considered in detail including the proposed action so that reviewers may evaluate their comparative merits,” and provide a clear basis for the agency’s choice.⁶⁵ Programmatic NEPA reviews are “governed by the same regulations and guidance that apply to non-programmatic NEPA reviews,” and should strive to meet the same standards.⁶⁶ This includes the NEPA requirements for alternatives analysis.⁶⁷

A broad range of alternatives for the coal PEIS could include, for example: (i) conducting no new federal coal leasing (the “no action” alternative); (ii) conducting leasing at a level that maximizes social welfare, by accounting for all quantifiable costs and benefits of the program; (iii) conducting leasing in order to meet U.S. greenhouse gas emission goals; (iv) conducting leasing to maximize federal revenue; and (v) conducting coal leasing to meet current demand.

5. Interior Should Calculate the Upstream and Downstream Greenhouse Gas Emissions of Selected Alternatives.

With the launch of the coal Programmatic EIS, Interior indicated that it would evaluate greenhouse gas emissions from coal production and consumption, and develop a “public database to account for the annual carbon emissions from fossil fuels developed on federal lands.”⁶⁸ This is consistent with NEPA requirements and the White House Council on Environmental Quality’s latest guidance, and will provide critical information about how federal coal production and consumption contributes to climate change. In order to provide the best information available to policymakers and the public, Interior should quantify and disclose the full upstream and downstream emissions for its proposed action and reasonable alternatives. Upstream greenhouse gas emissions include methane and carbon dioxide released at the mine site, as well as transportation emissions that occur upstream of the power plant or other end use; downstream emissions include those associated with burning coal for electricity and other end uses.

Pursuant to NEPA, environmental impact statements for any action significantly affecting the environment must describe the affected environment and any direct, indirect, and cumulative impacts accruing from the action and reasonable alternatives.⁶⁹ 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.⁷⁰ White House Council on Environmental Quality (CEQ) regulations implementing NEPA require agencies to consider direct, indirect and cumulative impacts accruing from the proposed action, as well as connected and cumulative actions.⁷¹

CEQ’s 2014 guidance on assessing the climate impacts in federal actions subject to NEPA also makes clear that upstream and downstream greenhouse gas emissions should be included in environmental impact statements, stating that “emissions from activities that have a reasonably close causal relationship to the Federal action, such as those that may occur as a predicate for the agency action (often referred to as upstream emissions) and as a consequence of the agency action (often referred to as downstream emissions) should be accounted for in the NEPA analysis.”⁷² Consistent with this view, NEPA also expressly requires agencies to assess “the relationship between local short-term uses of man’s environment and the maintenance and enhancement of long-term productivity.”⁷³

In the Programmatic EIS, Interior should analyze and disclose the upstream and downstream climate and environmental impacts of its proposed action and reasonable alternatives, including the “no action” alternative. Transparent disclosure of greenhouse gas emissions helps decision makers and the public make better decisions. In order to do this analysis, Interior should model each alternatives’ energy market and greenhouse gas emission effects. This requires accounting for the substitution effects induced by each alternative—such as the substitution of additional natural gas and renewable energy production and consumption (as well as increased energy conservation) in place of new coal production and consumption that would result from the “no action” alternative. More detail on how Interior should do this analysis, including how to analyze energy substitution effects, is described in item number 10 in this report.

In addition, Interior should clarify in this proceeding or in separate agency guidance that its sub-agencies, BLM and BOEM, should analyze and quantify the upstream and downstream greenhouse gas emissions for project level decisions, such as coal, oil, and natural gas lease sales. Historically, Interior has been inconsistent in analyzing the upstream and downstream climate impacts of its proposed actions and alternatives.⁷⁴ For example, in its latest Proposed Program

Photo © Bureau of Land Management



Public land in Colorado.

for Offshore Leasing, BOEM did not fully quantify the downstream greenhouse gas emissions associated with offshore oil and gas production.⁷⁵ And a recent survey of nineteen EISs prepared between 2012 and 2014 for proposals related to fossil fuel development—including the approval of coal, oil and gas leases and the construction of natural gas pipelines and export terminals—found that only three of these EISs quantified lifecycle greenhouse gas emissions.⁷⁶

The coal PEIS presents an important opportunity to analyze the upstream and downstream greenhouse gas emissions of selected alternatives, and to set multiple federal agencies on the proper course for conducting this analysis in future project-level reviews.

6. Interior Should Use the Social Cost of Carbon and Social Cost of Methane to Quantify the Climate Impacts of its Proposed and Alternative Leasing Scenarios.

Executive Orders, the White House Office of Management and Budget’s Circular A-4, and CEQ’s 2014 NEPA guidance strongly counsel towards the use the Social Cost of Carbon and Social Cost of Methane in this process. These metrics are critical to illuminating the hidden costs of coal production and evaluating the overall return of the federal coal program to taxpayers, as called for by Secretarial Order 3338. Using these metrics in the Programmatic EIS will also lay the groundwork for their use in future rules, regulatory impact analyses, and EISs prepared by BLM and other agencies.

Executive Orders 12,866 and 13,563 direct federal agencies to make a reasoned determination that an action’s benefits justify its costs.⁷⁷ White House Office of Management and Budget (“OMB”) guidance similarly states that where benefits and costs can be quantified and expressed in monetary units, a cost-benefit analysis can provide decision makers with the most efficient alternative.⁷⁸ Quantitative estimates of benefits and costs are preferable to qualitative descriptions, as they help decision makers understand the magnitude of the effects of alternative actions.⁷⁹ This is true for environmental impact analyses prepared pursuant to NEPA, as well as for regulatory impact analyses.

CEQ’s 2014 Revised Draft Guidance on analyzing greenhouse gas emissions in NEPA Reviews recommends using the Social Cost of Carbon when an agency monetizes some costs or benefits, stating:

When an agency determines it appropriate to monetize costs and benefits, then, although developed specifically for regulatory impact analyses, *the Federal social cost of carbon, which multiple Federal agencies have developed and used to assess the costs and benefits of alternatives in rulemakings, offers a harmonized, interagency metric that can provide decisionmakers and the public with some context for meaningful NEPA review.* When using the Federal social cost of carbon, the agency should disclose the fact that these estimates vary over time, are associated with different discount rates and risks, and are intended to be updated as scientific and economic understanding improves.⁸⁰

Several federal agencies, including BLM, have used the Social Cost of Carbon and Social Cost of Methane in recent regulatory impact analyses. In BLM’s 2016 proposed venting and flaring rule for oil and gas wells on federal lands, the agency used the Social Cost of Methane in its regulatory impact analysis to calculate the net benefits of the proposed rule.⁸¹ In addition, EPA used it in the regulatory impact analysis for its New Source Performance Standards for methane and volatile organic compound emissions from the oil and natural gas sector, as well as in its proposed rule on landfill methane emission standards.⁸²

However, Interior’s sub-agencies have been inconsistent in using these metrics. For example, in BOEM’s Draft Proposed Program for 2017-2022 Outer Continental Shelf oil and gas leasing, BOEM states that, “USDOJ does not yet have a policy in place concerning the monetization of the social cost of carbon, therefore, BOEM is not monetizing the impacts from greenhouse gas emissions in the DPP analysis, but is analyzing greenhouse gas emissions in a quantitatively and qualitatively manner.”⁸³ BLM also failed to use the Social Cost of Carbon and Social Cost of Methane in past NEPA analyses for coal, oil, and natural gas lease sales.⁸⁴

The Social Cost of Carbon and Social Cost of Methane are the best tools available to evaluate the costs and benefits of greenhouse gas emissions. The Social Cost of Carbon was derived through a rigorous, consensus-based, transparent process, using the best available scientific and economic models and data.⁸⁵ The federal Interagency Working Group recently released an updated set of Social Cost of Carbon estimates, centered at approximately \$40 per metric ton of CO₂ for emissions in the year 2015, in 2015 dollars at a 3 percent discount rate.⁸⁶

EPA has developed a method for directly estimating the Social Cost of Methane using an analysis conducted by Marten *et al.*, which is based on the same techniques the Interagency Working Group developed to estimate the Social Cost of Carbon.⁸⁷ The Social Cost of Methane’s key assumptions and choices have therefore been shaped by the same rigorous, consensus-based, transparent process used for the Social Cost of Carbon.⁸⁸ Marten *et al.* was published in a peer reviewed economics journal, and EPA conducted additional internal and peer review of this methodology.⁸⁹ Like the Social Cost of Carbon, if anything the Social Cost of Methane is underestimated due to overly conservative assumptions.⁹⁰ Both metrics constitute “the best available science” to inform agency regulation.⁹¹

In this Programmatic EIS, Interior is evaluating whether the coal program provides “fair market value” to taxpayers, and should analyze different coal production and royalty rate scenarios in order to make this determination. Using the Social Cost of Carbon and the Social Cost of Methane is the best (if not only) way account for the cost of greenhouse gas pollution that results from each alternative scenario, and will provide decision makers and the public with context for a meaningful NEPA review.

7. Interior Should Evaluate Whether the Current Coal Program Earns “Fair Market Value” for Taxpayers, by Conducting a Cost-Benefit Analysis of the Coal Program.

As called for in Secretarial Order 3338 and building on prior recommendations in this report, Interior should evaluate whether it currently earns “fair market value” for taxpayers as required by the Federal Land Policy and Management Act.⁹² As reported by the Government Accountability Office, the Office of the Inspector General, and several non-governmental organizations, the federal coal program suffers from stagnant minimum bids and rental rates; inconsistent and opaque “fair market value” appraisals; royalty payment loopholes and deductions; and prevalent environmental externalities that impose uncompensated costs on the public, among other issues.⁹³ Therefore, Interior should conduct a cost-benefit analysis of the current coal program, in order to measure the net benefits that the program provides.

Interior can do this by analyzing the revenue and other benefits of coal leasing, as compared to the costs, including the social and environmental costs of leasing. As discussed above, it should use the Social Cost of Carbon and Social Cost of Methane in order to do this analysis. The result of this cost-benefit analysis can provide a baseline against which to

measure potential royalty rate increases; increases to minimum bids or rental rates; and other policy changes, such as tailoring coal production to meet climate goals, or ceasing the issuance of new leases altogether.

If the full benefits of coal production are accounted for in such an inquiry (such as bonus bids, royalty revenue, jobs, and state tax revenue), the full suite of social and environmental costs must be accounted for, as well.⁹⁴ Executive Orders 13,563 and 12,866, OMB Circular A-4, and EPA’s guidelines for economic analysis all indicate that benefits and costs should be treated in parity, because where all benefits and costs can be quantified and expressed in monetary units, cost-benefit analysis provides decision makers with an indication of the most efficient alternative, that is, the alternative that generates the largest net benefits to society.⁹⁵

Relevant environmental and social costs include upstream and downstream greenhouse gas emissions (methane and carbon dioxide), and other quantifiable costs, such as transportation-related externalities (including particulate matter emissions, public fatalities, noise, and congestion), habitat effects, and the costs of unfunded reclamation. Independent think tanks and scholars have examined some of these costs of coal production, with a particular emphasis on the cost of greenhouse gas emissions.⁹⁶ To the extent that some of these costs and benefits are not quantifiable, they should be qualitatively analyzed.⁹⁷

8. Interior Should Analyze the Optimal Fiscal Terms for New and Modified Coal Leases by Analyzing Social Cost of Carbon and Social Cost of Methane Royalty “Adders,” Among Other Potential Changes Geared to Maximizing Net Benefits.

In the Programmatic EIS, Interior should analyze the optimal fiscal terms for any new and modified coal leases, in order to earn fair market value for American taxpayers.⁹⁸ In particular, Interior should model royalty rate scenarios as part of its alternatives analysis that account for the social and environmental costs of coal production, consistent with a social welfare maximizing perspective. The goal is to identify an alternative that maximizes net social benefits, or “fair market value.” In her 2016 Plan for Conservation and Collaborative Stewardship of America’s Great Outdoors, Secretary Clinton called for reforms such as “raising royalty rates, which currently lag below the rates on state and private lands.” Adjusting royalty rates to recoup social and environmental costs is one persuasive rationale for raising rates, among others.

Environmental and social externalities from coal production vary with the amount of coal produced; therefore, these costs are best recouped through royalties. NYU Law School’s Institute for Policy Integrity and Vulcan Philanthropies, working with ICF International, each conducted separate analysis on increasing royalty rates to account for the Social Cost of Methane and Social Cost of Carbon, respectively. This work may provide a useful starting point for this analysis.

Policy Integrity found that using an upstream Social Cost of Methane adder would have added approximately \$2 billion in royalty revenue between 2009 and 2012 for production in four western states: Wyoming, Colorado, Montana and Utah.⁹⁹ To do this analysis, we used data on fugitive methane emissions from coal mines and the Social Cost of Methane to calculate a surface mine methane adder of approximately \$1 per metric ton of coal in 2015 (or \$0.90 per short ton), and an underground coal adder of \$8.79 per metric ton (\$7.97 per short ton), as underground coal mining emits more fugitive methane. We then calculated revised royalty rates that would incorporate this methane adder. For example, using average Wyoming mine mouth prices for Power River Basin subbituminous coal, the adder would increase royalty rates from 12.5 percent to 18.7 percent for surface-mined coal. The adjustment for underground mining royalty rates was

greater; for example, the royalty rate for underground coal mined in Utah would increase from 8 percent to 30 percent. In addition, because the Social Cost of Methane increases over time, the adder should increase over time.

We also calculated a transportation adder for Powder River Basin coal, using data on freight train routes and quantifiable transportation externalities, including greenhouse gas emissions, other air emissions, public fatalities, noise, congestion, and pavement. These costs totaled about \$10 per metric ton of coal in 2015 (about \$9 per short ton). Applied together, the fugitive methane and transportation adders would result in a larger royalty rate increase—from the current federal royalty rate of 12.5 percent to 82.6 percent for Powder River Basin coal.¹⁰⁰

The Vulcan and ICF International study examined the effect of different policy scenarios that increase the federal coal royalty rate and/or ramp down production through a tonnage production cap. The study used ICF International's Integrated Planning Model, which is commonly used by U.S. EPA and other agencies to model the effects of policy scenarios on energy markets. For example, Vulcan found that phasing-in an adder set at 20 percent of the Social Cost of Carbon—approximately \$15.30 per short ton in 2016—would add nearly \$3 billion in royalty receipts by 2025.¹⁰¹ Introducing higher royalty rates, phased-in over 10 years, would also reduce overall carbon dioxide emissions, even with the Clean Power Plan in place.¹⁰²

All of Vulcan's modeled reforms would induce substitution of renewable energy and natural gas for coal, resulting in a net decline in greenhouse gas emissions. In the 20 percent and 50 percent Social Cost of Carbon cases, gross royalties and the state share of royalties *increase* over the non-adjusted royalty base cases, even as production declines.¹⁰³ Ramping coal production down (as opposed to raising royalty rates) would achieve similar greenhouse gas emission benefits, but with diminished revenue for states and the federal treasury.

Thus, by increasing royalty rates to recoup some of the social and environmental costs of coal production, Interior can significantly increase revenue for states and the federal government, while simultaneously reducing greenhouse gas emissions from coal production and combustion. This results in significant net social benefits. Interior should analyze and model these alternative royalty rate scenarios in the PEIS, as well as in a parallel rulemaking on coal leasing fiscal terms.

Photo © ixtla



A coal train in Blue Island, Illinois.

Done correctly, this analysis can provide decision makers and the public with a social welfare maximizing alternative, and one that is consistent with Interior’s statutory mandate to harmonize production with preservation.

9. Interior Should Analyze How to Tailor Any Future Leasing to National Climate Change Goals and Commitments.

Secretarial Order 3338 calls for the Programmatic EIS to address how to manage the federal coal program “to both meet the Nation’s energy needs and its climate goals, as well as how to best protect the public lands from climate change impacts.”¹⁰⁴ In addition to analyzing social welfare maximizing alternatives, Interior should also analyze coal production scenarios that would tailor federal coal production to U.S. climate change goals. For example, the government could set a national “carbon budget” for federal lands, based on what is needed to meet its climate change commitments, and adjust the fiscal terms or leasing policies for federal fossil fuels in order to meet that budget. For example, this could be done through an escalating royalty rate; a phased-in production cap; or by halting all new coal leasing and all new coal lease modifications and extensions.

With the highest carbon content of all fossil fuels, coal mined on federally managed lands accounts for approximately 40 percent of U.S. coal consumption and 13 percent of total U.S. energy-related carbon dioxide emissions.¹⁰⁵ Several studies indicate that reducing greenhouse gas emissions from coal use globally is critical to addressing climate change.¹⁰⁶

As part of the PEIS, Interior should explore how to make the federal coal program consistent with U.S. climate change goals and commitments, including the United States’ Intended Nationally Determined Contribution (INDC) submitted to the United Nations Framework Convention on Climate Change for the 2015 Paris Climate Change 21st Conference of Parties. The U.S. target is to reduce greenhouse gas emissions by 26 to 28 percent below 2005 levels by 2025, and to make best efforts to reduce emissions by 28 percent.¹⁰⁷

Given its capacious statutory mandates, Interior has the authority to manage federal coal production to help meet national greenhouse gas emission goals and commitments, including the commitments made as part of the Paris Agreement. As the steward of public lands for present and future generations, 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.”¹⁰⁸

The Federal Land Policy and Management Act, provides that federal lands are to be used only for the advancement of the national interest.¹⁰⁹ The Act declares that:

[P]ublic lands be managed in a manner that will protect the quality of scientific, scenic, historical, ecological, environmental, air and atmospheric, water resource, and archeological values; that, where appropriate, will preserve and protect certain public lands in their natural condition; that will provide food and habitat for fish and wildlife and domestic animals; and that will provide for outdoor recreation and human occupancy and use.¹¹⁰

The Act requires agencies to manage public lands in accordance with the “principles of multiple use and sustained yield.”¹¹¹ The Act defines “multiple use” as:

[T]he management of the public lands and their various resource values so that they are utilized in the combination that will *best meet the present and future needs of the American people*; . . . the use of some land for less than all of the resources; a combination of balanced and diverse resource uses that takes into account the *long-term needs of future generations for renewable and nonrenewable resources*, including, but not limited to, recreation, range, timber, minerals, watershed, wildlife and fish, and natural scenic, scientific and historical values.¹¹²

“Multiple use” also requires consideration to be given to “the relative values of the resources and not necessarily to the combination of uses that will give the greatest economic return or the greatest unit output.”¹¹³

Managing federal coal leasing in a manner that helps meet national climate goals is also consistent with Executive Order 13,693, “Planning for Federal Sustainability in the Next Decade,” which directs federal agencies to inventory and adopt targets for reducing their greenhouse gas emissions.¹¹⁴

In light of this authority, Interior should analyze at least one coal production scenario in the PEIS that would tailor federal coal production to U.S. climate change goals. For example, the Stockholm Environment Institute developed estimates of the greenhouse gas emission reductions that could be achieved if Interior were to stop issuing new coal leases and stop renewing non-producing leases as they come due.¹¹⁵ The study found that such restrictions would cause a net reduction in CO₂ emissions by 2030 of 71 Mt CO₂, even after accounting for substitution effects such as some increased coal production in the Illinois Basin and Appalachia (on non-federal lands) and some substitution of natural gas for coal.¹¹⁶

As an alternative to a production limit, Interior could analyze using an escalating royalty rate that is designed to decrease federal coal production over time. The PEIS is the ideal venue in which to explore these viable leasing alternatives, and to assess how to proactively manage federal coal to meet long-term national needs and priorities.

10. For Each Alternative Scenario, Interior Should Model the Climate Impact and Effect on Coal Prices, Royalty Payments, and Energy Markets, Including Energy Substitution Effects.

Interior should carefully model its selected alternatives’ energy production scenarios and resulting climate, revenue, and other effects. As part of this analysis, it should analyze the substitution effects among coal (on public and private lands), natural gas, oil, and renewable energy sources that result from changes in coal production or royalty rates. Interior may wish to consult with CEQ, the Council of Economic Advisors, and the National Center for Environmental Economics at the Environmental Protection Agency (EPA) in conducting this analysis.

Conducting proper substitution analysis in the PEIS is critical to analyzing environmental impacts, and ultimately, to selecting the most efficient alternative. Decreasing coal production or increasing the federal royalty rate for coal is expected to lead to greater substitution of natural gas and renewables for coal (as well as substitution from coal produced on public lands to private lands) in the overall energy mix, as well as greater energy conservation. This, in turn, will reduce total greenhouse gas emissions. In order to do proper substitution analysis, Interior should model each alternative scenario’s

energy market and greenhouse gas emission effects. This requires accounting for the substitution effects induced by each alternative—such as the substitution of natural gas and renewable energy (as well as increased energy conservation) in place of coal production and consumption that would result from the “no action” alternative.

BLM has been inconsistent in conducting appropriate substitution analysis in some of its prior environmental impact statements for proposed coal projects. For example, in its 2010 EIS for the Wright Area coal leases, located in the Powder River Basin, BLM incorrectly reasoned that if it were to select the No-Action Alternative (not leasing the coal), other coal mines would increase production to entirely replace all 2 billion tons of coal anticipated from the Wright Area leases, such that the amount of coal burned in the United States—and the resulting carbon dioxide and methane emissions—would be identical whether or not the leases were approved.¹¹⁷ BLM’s assumption runs counter to economic principles of supply and demand, as well as the empirical state of knowledge concerning the U.S. coal market. The leases at issue would produce up to 230 million tons of coal per year—more than 20 percent of the total U.S. coal used for electricity in 2010. In the No-Action alternative, removing over 20 percent of total U.S. production would be a non-marginal change that would affect overall coal prices, demand, and greenhouse gas emissions. The Final EIS is currently being challenged in the U.S. Court of Appeals for the 10th Circuit on this basis.¹¹⁸ BOEM’s proposed five-year offshore leasing program contains some similar discrepancies with respect to downstream greenhouse gas emissions.

Other federal agencies, including the Surface Transportation Board, the Forest Service, the State Department, the Office of Surface Mining Reclamation and Enforcement (another Interior sub-agency), the Federal Energy Regulatory Commission, and the Nuclear Regulatory Commission, have properly analyzed the effects of their energy management decisions in NEPA reviews, consistent with the advice of the U.S. Court of Appeals for the Eighth Circuit and the U.S. District Courts of Colorado and Minnesota.¹¹⁹

Interior can choose from several sophisticated models in order to evaluate the effect of different coal leasing policies and royalty rates on the market, such as ICF International’s Integrated Planning Model (IPM); the U.S. Energy Information Administration’s National Energy Modeling System (NEMS); and BOEM’s MarketSim model (which it uses to analyze lease sale scenarios in its five-year planning process). Each of these models has benefits and drawbacks.¹²⁰ IPM, which is used by EPA and several other federal agencies, is the most detailed of the models (with respect to the coal and natural gas markets, including transportation and distribution) and the most readily tailored to Interior’s coal PEIS.¹²¹ However, IPM is not publicly available and is less transparent than other models. NEMS is publicly available and more transparent than IPM, and has more detail about some coal substitutes (particularly oil and renewables), consumer behavior, and the macro-economy. However, NEMS—which is used by U.S. EIA and the Surface Transportation Board, among others—would require more modification than IPM to tailor it to the coal PEIS and future coal analyses, such as project-level environmental reviews. NEMS—and all models—should also be tailored to adjust baseline scenarios to align with existing U.S. climate change commitments, such as the target to reduce greenhouse gas emissions by 26 to 28 percent below 2005 levels by 2025. Ideally, the model’s baseline should accord with U.S. climate change pledges, and sensitivity analysis should be done for different baselines.

Finally, BOEM’s MarketSim model is publicly available and is the most transparent of the three models; but given its focus on offshore oil and natural gas production, it would require the greatest amount of modification to make it suitable for the coal PEIS and other coal analyses. And even then, the model may not capture important nuances of the energy resource market, such as detailed information on different fuels’ elasticities of supply, which is relevant to substitution analysis. Ultimately, BLM must weigh model transparency against model complexity. It may be preferable to use multiple



A coal mine in Gillette, Wyoming.

models to balance these tradeoffs; barring this possibility, the limitations of BLM’s chosen model should be disclosed and sensitivity analysis (including a Monte Carlo simulation) conducted.¹²²

In short, Interior should carefully model alternative coal leasing scenarios and their resulting climate, revenue, and other impacts. Interior should take care to conduct substitution analysis properly in the PEIS, as well as in future project-level reviews. Multiple sophisticated models are available to conduct this analysis in the coal PEIS, as well as for future supply-side energy projects. Interior should ensure that the proper baseline is used, that the limitations of the model are disclosed, and that sensitivity analysis is conducted for key parameters.

11. Interior Should Take Steps to Curb Royalty Rate Reductions and Loopholes, Which Impair a Fair Return to Taxpayers.

Relevant to the question of whether the coal program is structured to ensure a fair return is how royalties are calculated, including whether any deductions or loopholes affect the overall return to the public. As part of its “good government” reforms announced in January 2016, Interior stated that it plans to “clarify the process through which BLM may consider requests for royalty rate reductions,” and make such requests public.¹²³ However, it would be preferable for Interior to eliminate or amend its existing royalty relief regulation, as it provides improper incentives to coal companies and hinders the receipt of a fair return.

Under current law, the Secretary of the Interior has discretion to reduce or waive royalties “whenever in [her] judgment it is necessary to do so in order to promote development, or whenever in [her] judgment the leases cannot be successfully operated under the terms provided therein.”¹²⁴ Pursuant to its current regulations, BLM has discretion to grant royalty rate reductions if three requirements are met: (i) the royalty rate reduction encourages the greatest ultimate recovery of the coal resource; (ii) the rate reduction is in the interest of conservation of the coal and other resources; and (iii) the rate reduction is necessary to promote development of the coal resource.¹²⁵

Independent analysis by Headwaters Economics found that royalty rate reductions occurred on approximately 36 percent of leases offered for sale between 1990 and 2015.¹²⁶ The effective royalty rate was only 4.9 percent of the gross market value of coal extracted between 2008 and 2012. Similarly, the Government Accountability Office found that the reported rate that lessees pay on the mine price used for royalty valuation ranged between 5.6 percent for federal leases in Colorado and 12.2 percent in Wyoming.¹²⁷ The lower reported rates were largely a function of rate reductions. These effective royalty rates are well below the statutorily-set minimum rate of 12.5 percent for federal surface-mined coal. Further, because lease-specific royalty rates and allowable cost deductions are currently considered proprietary data, there is little oversight of these rate reductions.

Interior should eliminate, or at least amend, its royalty rate reduction regulation. Rate reductions that are “necessary to promote development of the coal resource” amount to a subsidy for coal, and the government should not be in the business of supporting uneconomical coal production from public lands, especially at a potential loss to taxpayers. And rate reductions that are necessary to “encourage[] the greatest ultimate recovery of the coal resource” similarly prioritize coal production over other competing values. Finally, this regulation is directly at odds with managing the federal coal program to maximize the net return to taxpayers, and threatens the utility of any future royalty rate adjustments made on this basis. As President Obama remarked in his State of the Union address, “[r]ather than subsidize the past, we should invest in the future—especially in communities that rely on fossil fuels.”¹²⁸ Eliminating this royalty relief loophole is a common sense measure that moves the federal coal program in the right direction.

12. Interior Should Evaluate Bidding and Lease Eligibility Reforms That Can Help Secure Fair Market Value and Reduce Risks to Taxpayers.

Secretarial Order 3338 calls for the Programmatic EIS to address “whether the bonus bids, rents, and royalties received under the Federal coal program are successfully securing a fair return to the American public for Federal coal, and if not, what adjustments could be made to provide such compensation.”¹²⁹ At the bidding stage, Interior should be compensated for the estimated market price of the coal to be leased, the fixed costs of leasing, as well as the option value of mining coal (or informational value of delay). Moreover, given serious problems with untimely coal mine reclamation¹³⁰ and a slew of high profile coal company bankruptcies that threaten to leave taxpayers with a large bill for coal mine clean-up,¹³¹ Interior should revise its coal leasing eligibility criteria to offer new coal leases exclusively to companies that are in compliance with bonding and reclamation requirements. If any of these reforms are outside the scope of the coal PEIS, Interior should consider them through a separate rulemaking. The goal is to move toward a program that reduces taxpayer risk and maximizes social welfare.

First, the minimum bid for coal leasing has been set at \$100 per acre since 1982.¹³² The minimum bid should be raised to account for inflation, fixed social costs, and the option value of leasing, in order to serve as a floor price for fair market value, as originally intended. Accounting for inflation, alone, would raise the minimum bid to \$247 per acre. BLM should also account for the value of lost amenities (i.e., lost public access to recreation) and estimated public funding of reclamation, in the minimum bid price or rental rate. For example, as soon as a tract is leased, the public loses access to it for other purposes, such as recreation or habitat protection. And as soon as companies undertake exploratory mining, the site incurs reclamation costs.

In addition, while coal companies are supposed to post bonds adequate to pay for the cost of land reclamation upon cessation of mining, these bonds often fall short of what is required for reclamation.¹³³ In prior work, using data on the

cost of publicly funded reclamation, we estimated this cost to be about \$0.44 per metric ton of coal.¹³⁴ This represents a conservative lower bound for fixed costs, as it omits other costs, such as lost public access to the tract and the opportunity cost of leasing. In some cases, these costs may be significant, especially in areas with more recreation, hunting, scenic value, or renewable energy production potential. These are fixed costs, as opposed to variable costs, because they are incurred by the public independent of how much coal is mined.

Second, BLM's minimum bid and fair market value appraisals also fail to account for the option value of coal leasing, which is the value of waiting for more information on energy prices and extraction risks before deciding whether and when to lease the public's non-renewable energy resources to private companies. As the D.C. Circuit recently indicated with respect to offshore leasing, there is "a tangible present economic benefit to delaying the decision to drill," and failing to account for this value undervalues public resources.¹³⁵ Interior can look to BOEM's proposed program for offshore leasing for 2017 to 2022 as a starting point. BOEM uses a hurdle price analysis to account for economic uncertainty, and qualitatively considers environmental and social option value when determining where and when to lease.¹³⁶ Ideally, both BOEM and BLM would quantify economic, environmental, and social uncertainty. Interior should consider instructing regional offices to incorporate option value into their internal fair market value calculations, or revising its current regulations in line with this recommendation.

Third, Interior should revise its coal leasing eligibility criteria to include proof of that a coal lease applicant is in compliance with bonding and reclamation requirements.¹³⁷ The Surface Mining Control and Reclamation Act (SMCRA) of 1977 requires coal companies to purchase bonds—effectively, insurance policies—that can be used to pay for reclamation if the companies are insolvent.¹³⁸ In enacting SMCRA, Congress also sought to assure that "adequate procedures are undertaken to reclaim surface areas as contemporaneously as possible with the surface coal mining operations."¹³⁹

However, regulators in states like Wyoming have allowed coal companies that satisfy certain financial conditions to "self-bond," or to operate without posting any surety or collateral—in effect, offering only their promise to pay once mining operations have concluded. Self-bonding is less secure than requiring coal companies to post surety bonds or collateral bonds, and poses risks to the public in the event that these companies enter into liquidation bankruptcy. In an era of coal bankruptcies and mounting unfunded reclamation, Interior should proactively limit this risk.

Interior should revise its coal lease eligibility criteria to include evidence that a coal lease applicant is in compliance with all bonding and reclamation requirements. This can be done through a rulemaking to revise its basic coal lease eligibility criteria.¹⁴⁰ In fact, if Interior made such a change, it may be less necessary to raise minimum bids on the basis on unfunded reclamation, as new coal leases or modifications could not be issued to an applicant who fails to meet these criteria. (It would still be rational to increase minimum bids on the basis of inflation and option value, alone.) In addition, Interior's Office of Surface Mining Reclamation and Enforcement (OSMRE) should take steps to reduce the risk to taxpayers from self-bonding. For example, OSMRE should use its existing authority to require bond substitution for any company that is in violation of current bonding rules.¹⁴¹

Together, these bidding and lease eligibility reforms can help secure fair market value and reduce risks to taxpayers.

Conclusion

The policy and procedural recommendations contained in this report are intended to help Interior modernize the federal coal program and provide maximum net benefits to American taxpayers. The transition to a 21st Century coal program must not end with the preparation of the Programmatic EIS; therefore, many of these recommendations call for ongoing strategic planning, regular environmental reviews, and more robust project-level analysis. The programmatic review should identify opportunities to increase revenue, reduce greenhouse gas emissions, and align federal land management with U.S. climate change goals, paying enormous dividends to the public.

Endnotes

- ¹ U.S. DEPARTMENT OF THE INTERIOR, OFFICE OF THE SECRETARY, Press Release: Secretary Jewell Launches Comprehensive Review of Federal Coal Program (Jan. 15, 2016), available at <https://www.doi.gov/pressreleases/secretary-jewell-launches-comprehensive-review-federal-coal-program>.
- ² U.S. DEPARTMENT OF THE INTERIOR, SECRETARIAL ORDER No. 3338 (Jan. 15, 2016), available at http://www.blm.gov/style/medialib/blm/wo/Communications_Director/public_affairs/news_release_attachments.Par.4909.File.dat/FINAL%20SO%203338%20Coal.pdf (hereinafter, “SECRETARIAL ORDER No. 3338”).
- ³ 43 U.S.C. § 1701(a)(9).
- ⁴ 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.
- ⁵ 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), available at <http://www.gao.gov/assets/660/659801.pdf> (hereinafter “U.S. GOV’T ACCOUNTABILITY OFFICE, COAL LEASING REPORT”).
- ⁶ 30 U.S.C. § 187 (emphasis added).
- ⁷ 43 U.S.C. §§ 1701(a)(8), 1701(a)(12).
- ⁸ 43 U.S.C. § 1701(a)(8).
- ⁹ See Jayni Foley Hein and Peter Howard, *Illuminating the Hidden Costs of Coal*, INSTITUTE FOR POLICY INTEGRITY, NYU SCHOOL OF LAW (Dec. 2015), available at http://policy-integrity.org/files/publications/Hidden_Costs_of_Coal.pdf; Jayni Foley Hein and Peter Howard, *Reconsidering Coal’s Fair Market Value*, INSTITUTE FOR POLICY INTEGRITY, NYU SCHOOL OF LAW (Oct. 2015), available at http://policyintegrity.org/files/publications/Coal_fair_market_value.pdf.
- ¹⁰ A May 27, 2016 letter signed by 14 U.S. Senators made a similar point: “A huge disparity exists between the high, long-term costs of burning the public’s coal and the low, short-term return from selling it. The BLM needs to address the disparity.” Letter from Sen. Maria Cantwell et al., to Interior Sec’y Sally Jewell (May 27, 2016), available at http://www.energy.senate.gov/public/index.cfm/files/serve?File_id=4FE163E6-53AE-46D5-871E-1AE02ED-41AB4.
- ¹¹ U.S. ENVIRONMENTAL PROTECTION AGENCY, The Social Cost of Carbon, available at <https://www3.epa.gov/climatechange/EPAactivities/economics/scc.html> (last visited June 15, 2016).
- ¹² U.S. BUREAU OF OCEAN ENERGY MANAGEMENT, 2017–2022 OUTER CONTINENTAL SHELF OIL AND GAS LEASING PROPOSED PROGRAM 5-1 (March 2016), available at <http://www.boem.gov/2017-2022-Proposed-Program-Decision/> (hereinafter “BOEM 2017-2022 PROPOSED PROGRAM”).
- ¹³ *Id.*; *California v. Watt*, 712 F.2d 584 (D.C. Cir. 1983) (“Watt II”). The Court also found that receipt of fair market value does not mean “maximization of revenues.” See also *Natural Resources Defense Council, et al. v. Hodel*, 865 F.2d 288 (D.C. Cir. 1988) (upholding the agency’s cost-benefit methodology).
- ¹⁴ BOEM 2017-2022 PROPOSED PROGRAM, *supra* note 12 at 5-10.
- ¹⁵ See Exec. Order No. 12,866 § 6(3)(C), 58 Fed. Reg. 51,741 (Sept. 30, 1993).
- ¹⁶ OFFICE OF MANAGEMENT AND BUDGET, EXEC. OFFICE OF THE PRESIDENT, CIRCULAR A-4: REGULATORY ANALYSIS, 1-2, 18 (Sept. 17, 2003) (hereinafter “CIRCULAR A-4”).
- ¹⁷ See *id.* at 2; Exec. Order No. 13563, 76 Fed. Reg. 3821 (Jan. 21, 2011); Exec. Order No. 12866, 58 Fed. Reg. 51735 (Oct. 4, 1993); U.S. ENVIRONMENTAL PROTECTION AGENCY, GUIDELINES FOR PREPARING ECONOMIC ANALYSES 11–2 (Dec. 17, 2010), available at [https://yosemite.epa.gov/ee/epa/erm.nsf/vwAN/EE-0568-50.pdf/\\$file/EE-0568-50.pdf](https://yosemite.epa.gov/ee/epa/erm.nsf/vwAN/EE-0568-50.pdf/$file/EE-0568-50.pdf).
- ¹⁸ Michael Livermore, Patience is an Economic Virtue: Real Options, Natural Resources, and Offshore Oil, 84 U. COLO. L. REV. 581, 627-28 (2013).
- ¹⁹ PUBLIC LAND LAW REVIEW COMMISSION, ONE THIRD OF THE NATION’S LAND: A REPORT TO THE PRESIDENT AND TO THE CONGRESS 1, 38 (1970).

- ²⁰ *Bills to Provide for the Management, Protection, and Development of the National Resource Lands, and for Other Purposes: Hearing on S. 1507 and S. 1292 Before the Subcomm. on Env't. and Land Res. of the S. Comm. on Interior and Insular Affairs, 94th Cong. 1 (1975) (statement of James Evans, Legislative Rep., National Association of Counties).*
- ²¹ H.R. Rep. 94-681, 38, 1976 U.S.C.C.A.N. 1943, 1975 WL 12515 (Leg. Hist.) (stating, “When an area is newly opened to large scale mining, local governmental entities must assume the responsibility of providing public services needed for new communities, including schools, roads, hospitals, sewers, police protection, and other public facilities, as well as adequate local planning for the development of the community.”) The legislative history also reflects concern as to “the waste of valuable resources, and the creation of severe environmental impacts.” *Id.* at 20.
- ²² 30 U.S.C. § 191(a).
- ²³ See CONGRESSIONAL RESEARCH SERVICE, NO. R40645, U. S. OFFSHORE OIL AND GAS RESOURCES: PROSPECTS AND PROCESSES 19 (April 26, 2010), available at <http://fpc.state.gov/documents/organization/142736.pdf>; see also Senate Hearing 113-122, Revenue Sharing Hearing before the Committee on Energy and Natural Resources, United States Senate, 113th Congress, 1st Session to Consider S. 1273, The Fair Act of 2013 (July 2013), available at <http://www.gpo.gov/fdsys/pkg/CHRG-113shrg85874/html/CHRG-113shrg85874.htm> (stating, inter alia, “Revenue sharing is vital for these [coastal] areas to adequately respond to all sorts of impacts associated with enormous influxes of people and equipment;” “States and communities will have less incentive to support this development if they’re expected to shoulder risks and absorb impacts with no opportunity for revenue sharing” “[t]here are also cumulative impacts of offshore energy development such as habitat degradation and coastal erosion that are typically not mitigated at the project level, and it is important for states to address these impacts. Therefore, a significant portion of a state’s revenue share should be directed to addressing those unmitigated cumulative impacts, including through coastal protection and restoration and investments in natural infrastructure such as forested wetlands, marshes, oyster reefs, barrier islands, and dune systems.”).
- ²⁴ *Id.*
- ²⁵ See 30 C.F.R. § 219.410(d)(1)(A)-(C).
- ²⁶ SECRETARIAL ORDER No. 3338, *supra* note 2 at 7.
- ²⁷ 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.
- ²⁸ 30 U.S.C. § 187 (emphasis added).
- ²⁹ U.S. GOV’T ACCOUNTABILITY OFFICE, COAL LEASING REPORT, *supra* note 5 at 16.
- ³⁰ *Id.*
- ³¹ See 43 C.F.R. § 3400.5.
- ³² See 43 C.F.R. 3425.0-2; U.S. BUREAU OF LAND MANAGEMENT, History of the Coal Program, available at http://www.blm.gov/wy/st/en/programs/energy/Coal_Resources/PRB_Coal/history.print.html.
- ³³ See 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. The statute states: “No lease sale shall be held unless the lands containing the coal deposits have been included in a comprehensive land-use plan and such sale is compatible with such plan. The Secretary of the Interior shall prepare such land-use plans on lands under his responsibility where such plans have not been previously prepared.” 30 U.S.C. §201(a)(3)(A)(i).
- ³⁴ U.S. BUREAU OF LAND MANAGEMENT, Coal Operations; Competitive Leasing Process, available at http://www.blm.gov/wo/st/en/prog/energy/coal_and_non-energy.html (last updated Aug. 22, 2014).
- ³⁵ Tom Sanzillo, The Great Giveaway: An analysis of The United States’ Long-Term Trend of Selling Federally Owned Coal for Less Than Fair Market Value, INSTITUTE FOR ENERGY ECONOMICS AND FINANCIAL ANALYSIS 20 (June 2012), available at https://docs.google.com/file/d/0B_qWeYLAqoq1V2YyX3hnR25lcXM/edit. The author conducted independent analysis and found that as a result of policy choices and a subjective, flawed fair market value appraisal process, the U.S. Treasury lost almost \$30 billion in revenue from the coal program during the past 30 years.
- ³⁶ Energy Policy Act of 2005, Pub. L. No. 109-58, § 211, 119 Stat. 660 (Aug. 8, 2005).
- ³⁷ U.S. DEPARTMENT OF THE INTERIOR, OFFICE OF INSPECTOR GENERAL, NO. CR-EV-BLM-0001-2012, COAL MANAGEMENT PROGRAM, U.S. DEPARTMENT OF THE INTERIOR 13 (2013), available at http://www.eenews.net/assets/2013/06/11/document_pm_01.pdf (hereinafter “INSPECTOR GENERAL REPORT”).

- ³⁸ U.S. BUREAU OF OCEAN ENERGY MANAGEMENT, FIVE-YEAR OUTER CONTINENTAL SHELF (OCS) OIL AND GAS LEASING PROGRAM, available at <http://www.boem.gov/Five-Year-Program/> (last visited June 15, 2016).
- ³⁹ *Id.*
- ⁴⁰ Energy Policy Act of 2005, Pub. L. No. 109-58, § 211, 119 Stat. 660 (2005). The Act omitted hydropower as a part of the 10,000-megawatt goal. A megawatt is 1 million watts.
- ⁴¹ U.S. DEPARTMENT OF THE INTERIOR, Order No. 3285, *Renewable Energy Development by the Department of the Interior* (March 11, 2009), available at http://www.blm.gov/or/energy/opportunity/files/order_3285.pdf.
- ⁴² U.S. DEPARTMENT OF THE INTERIOR & U.S. DEPARTMENT OF AGRICULTURE, NEW ENERGY FRONTIER: BALANCING ENERGY DEVELOPMENT ON FEDERAL LANDS 6 (2011), available at <https://www.doi.gov/sites/doi.gov/files/migrated/whatwedo/energy/upload/NewEnergyFrontier050511.pdf> (hereinafter “NEW ENERGY FRONTIER”).
- ⁴³ Hillary Clinton, *Hillary Clinton’s Plan for Conservation and Collaborative Stewardship of America’s Great Outdoors*, THE BRIEFING, available at <https://www.hillaryclinton.com/briefing/factsheets/2016/06/01/hillary-clintons-plan-for-conservation-and-collaborative-stewardship-of-americas-great-outdoors/> (last visited June 16, 2016).
- ⁴⁴ NEW ENERGY FRONTIER, *supra* note 42 at 2.
- ⁴⁵ *Id.* at 18; U.S. DEPARTMENT OF THE INTERIOR, BUREAU OF LAND MANAGEMENT, BLM FACT SHEET: RENEWABLE ENERGY: SOLAR (Updated May 2015) (hereinafter “SOLAR FACT SHEET”), available at http://www.blm.gov/style/medialib/blm/wo/MINERALS__REALTY__AND_RESOURCE_PROTECTION_/energy/solar_and_wind.Par.99571.File.dat/fact_Solar.pdf.
- ⁴⁶ U.S. DEPARTMENT OF THE INTERIOR, BUREAU OF LAND MANAGEMENT, BLM FACT SHEET: RENEWABLE ENERGY: WIND (May 2015) (hereinafter “WIND FACT SHEET”), available at http://www.blm.gov/style/medialib/blm/wo/MINERALS__REALTY__AND_RESOURCE_PROTECTION_/energy/solar_and_wind.Par.38552.File.dat/fact_Wind.pdf.
- ⁴⁷ BUREAU OF LAND MANAGEMENT, *Renewable Energy*, available at <http://www.blm.gov/wy/st/en/programs/energy/renewable.html> (last updated Mar. 12, 2015).
- ⁴⁸ NEW ENERGY FRONTIER, *supra* note 42, at 13.
- ⁴⁹ U.S. BUREAU OF LAND MANAGEMENT, *Renewable Energy Projects Approved since the Beginning of Calendar Year 2009*, http://www.blm.gov/wo/st/en/prog/energy/renewable_energy/Renewable_Energy_Projects_Approved_to_Date.html (last updated Sept. 28, 2015).
- ⁵⁰ U.S. BUREAU OF LAND MANAGEMENT, *2016-17 Renewable Energy Projects*, http://www.blm.gov/wo/st/en/prog/energy/renewable_energy/2014-15_Renewable_Energy_Projects.html (last updated Jun. 8, 2016).
- ⁵¹ *Id.*
- ⁵² Amy L. Stein, *Renewable Energy through Agency Action*, 84 U. COLO. L. REV. 651, 655-56 (2013) (citing 42 U.S.C.A. § 4332(2)(C) (2004)).
- ⁵³ See, e.g., *Protect Our Communities Foundation v. Jewell*, No. 13CV575 JLS (JMA), 2014 U.S. Dist. LEXIS 50698 (S.D. Cal. Mar. 25, 2014) (regarding a challenge to BLM’s right-of-way for 62 wind turbines on 12,360 acres of federal land in California).
- ⁵⁴ See Stein, *supra* note 52, at 703-04 (describing how some groups staked mining claims on federal lands planned for solar and wind development).
- ⁵⁵ SOLAR FACT SHEET, *supra* note 45; WIND FACT SHEET, *supra* note 46. In October 2012, then-Secretary of the Interior Ken Salazar signed the Record of Decision finalizing a Programmatic EIS for solar energy development, also known as the Western Solar Plan. A Programmatic EIS relating to the development of wind energy on the public lands was completed in June 2005.
- ⁵⁶ See U.S. BUREAU OF LAND MANAGEMENT, *Withdrawal of Public Lands for the Protection and Preservation of Solar Energy Zones for Future Energy Development*; Arizona, California, Colorado, Nevada, New Mexico, and Utah, 78 Fed. Reg. 40,499, 40,500 (July 5, 2013).
- ⁵⁷ Romany Webb and Steven Weissman, *Addressing Climate Change Without Legislation: How The Department of the Interior Can Use Its Existing Legal Authority to Reduce Greenhouse Gas Emissions and Increase Clean Energy*, CENTER FOR LAW, ENERGY, AND THE ENVIRONMENT, UC BERKELEY, SCHOOL OF LAW 24-26 (June 2014), available at https://www.law.berkeley.edu/files/1_Corrected_DOI_Report.pdf.
- ⁵⁸ U.S. ENVIRONMENTAL PROTECTION AGENCY, *Learn More About RE-Powering*, available at https://www.epa.gov/repowering/learn-more-about-re-powering#what_is (last updated May 25, 2016).

- ⁵⁹ U.S. DEPARTMENT OF LABOR, Mine Safety and Health at a Glance, *available at* <http://arlweb.msha.gov/MSHAINFO/FactSheets/MSHAFCT10.asp> (last updated Jul. 20, 2015). See chart entitled “Coal Mine Safety and Health” and row entitled “Number of Miners.” There were 116,010 coal miners in 2014, down from 133,828 in 2008.
- ⁶⁰ THE SOLAR FOUNDATION, NATIONAL SOLAR JOBS CENSUS 2015 12 (2015), *available at* <http://www.thesolarfoundation.org/wp-content/uploads/2016/01/TSF-2015-National-Solar-Jobs-Census.pdf>; *see also* *Solar Energy Jobs Double in 5 Years*, CNN MONEY (Jan. 12, 2016), <http://money.cnn.com/2016/01/12/news/economy/solar-energy-job-growth-us-economy/>; ENVIRONMENTAL AND ENERGY STUDY INSTITUTE, Fact Sheet: Jobs in Renewable Energy and Energy Efficiency (Nov. 16, 2015), *available at* <http://www.eesi.org/papers/view/fact-sheet-jobs-in-renewable-energy-and-energy-efficiency-2015#1>.
- ⁶¹ THE WHITE HOUSE, THE PRESIDENT’S BUDGET, FISCAL YEAR 2016: INVESTING IN COAL COMMUNITIES, WORKERS, AND TECHNOLOGY: THE POWER+ PLAN, *available at* https://www.whitehouse.gov/sites/default/files/omb/budget/fy2016/assets/fact_sheets/investing-in-coal-communities-workers-and-technology-the-power-plan.pdf.
- ⁶² THE WHITE HOUSE, Press Release, Fact Sheet: Administration Announces Actions to Drive Growth in Solar Energy and Train Workers for Clean-Energy Jobs (Apr. 3, 2015), *available at* <https://www.whitehouse.gov/the-press-office/2015/04/03/fact-sheet-administration-announces-actions-drive-growth-solar-energy-an>.
- ⁶³ 40 C.F.R. § 1502.14.
- ⁶⁴ *Id.*
- ⁶⁵ *Id.*
- ⁶⁶ COUNCIL ON ENVIRONMENTAL QUALITY, EFFECTIVE USE OF PROGRAMMATIC NEPA REVIEWS, 79 Fed. Reg. 50,578, 50,580 (Aug. 25, 2014).
- ⁶⁷ *Id.* at 50,583.
- ⁶⁸ U.S. BUREAU OF LAND MANAGEMENT, Fact Sheet: Modernizing the Federal Coal Program 3 (Jan. 16, 2016), *available at* http://www.blm.gov/style/medialib/blm/wo/Communications_Directorate/public_affairs/news_release_attachments.Par.47489.File.dat/Coal%20Reform%20Fact%20Sheet%20Final.pdf.
- ⁶⁹ 42 U.S.C. § 4332(2)(C); 40 C.F.R. §§ 1502.14-1502.16.
- ⁷⁰ *Balt. Gas & Elec. Co. v. Natural Resources Defense Council, Inc.*, 462 U.S. 87, 97-98 (1983).
- ⁷¹ 40 C.F.R. §§ 1508.7, 1508.8, 1508.2.
- ⁷² COUNCIL ON ENVIRONMENTAL QUALITY, EXEC. OFFICE OF THE PRESIDENT, REVISED DRAFT GUIDANCE FOR FEDERAL DEPARTMENTS AND AGENCIES ON CONSIDERATION OF GREENHOUSE GAS EMISSIONS AND THE EFFECTS OF CLIMATE CHANGE IN NEPA REVIEWS, 79 Fed. Reg. 77,802, 77,825-26 (Dec. 24, 2014).
- ⁷³ 42 U.S.C. § 4332(2)(C)(4).
- ⁷⁴ *See, e.g.*, U.S. BUREAU OF LAND MANAGEMENT, Competitive Oil and Gas Lease Sale (Jan. 26, 2016), *available at* http://www.blm.gov/style/medialib/blm/mt/blm_programs/energy/oil_and_gas/leasing/lease_sales/2016/jan26_2015/oct__28_posting.Par.85050.File.dat/January2016leasesaleDNA_10615.pdf (“Incremental GHG emissions from downstream use of oil cannot be reasonably estimated. Oil may be used as fuel, as a lubricant, or as feedstock for chemical or plastic production. If used as a lubricant or feedstock, the oil would not be combusted and GHG emission estimates based on combustion would be incorrect. Attempts to estimate GHG emissions from downstream activities also lead to overestimation of global GHG emissions by counting combustion emissions at the production stage and again in GHG inventories of vehicular, residential, and industrial sources, which are already inventoried at end user sites”). In addition the Records of Decision for BLM’s Wright Area coal leases do not mention estimated greenhouse gas releases associated with the combustion of the leased coal to generate electricity. *See, e.g.*, U.S. BUREAU OF LAND MANAGEMENT, Record of Decision: North Hilight Field Lease by Application, Wyw164812, Campbell County, Wyoming 11-12 (February 2012), *available at* http://www.blm.gov/style/medialib/blm/wy/information/NEPA/hpdo/Wright-Coal/n-hilite.Par.6759.File.dat/N_H-ROD.pdf (“Issuing a Federal coal lease for the North Hilight Field tract would not result in the creation of new sources of human-caused GHG or mercury emissions.”).
- ⁷⁵ BOEM 2017-2022 PROPOSED PROGRAM, *supra* note 12.
- ⁷⁶ Jessica Wentz, Grant Glovin, and Adrian Ang, *Survey of Climate Change Considerations in Federal EISs, 2012-2011*, SABIN CENTER FOR CLIMATE CHANGE LAW, COLUMBIA LAW SCHOOL (Feb. 2016), *available at* https://web.law.columbia.edu/sites/default/files/microsites/climate-change/survey_of_climate_change_considerations_in_federal_environmental_impact_statements_2012-2014.pdf.
- ⁷⁷ Exec. Order No. 13,563 §§ 1(b); Exec. Order No. 12,866 §1(b)(6).

- ⁷⁸ CIRCULAR A-4, *supra* note 16 at 2.
- ⁷⁹ *Id.* at 27 (“You should monetize quantitative estimates whenever possible.”).
- ⁸⁰ COUNCIL ON ENVIRONMENTAL QUALITY, EXEC. OFFICE OF THE PRESIDENT, REVISED DRAFT GUIDANCE FOR FEDERAL DEPARTMENTS AND AGENCIES ON CONSIDERATION OF GREENHOUSE GAS EMISSIONS AND THE EFFECTS OF CLIMATE CHANGE IN NEPA REVIEWS, 79 Fed. Reg. 77,802, 77,827 (Dec. 24, 2014). CEQ does not address the Social Cost of Methane in this document.
- ⁸¹ DEPARTMENT OF THE INTERIOR, Proposed Rule: Waste Prevention, Production Subject to Royalties, and Resource Conservation, 81 Fed. Reg. 6616, 6624 (Feb. 8, 2016) (“BLM estimates that this rule would result in monetized benefits of \$255–329 million per year (using a 7 percent discount rate to calculate the present value of future annual cost savings, and using model averages of the Social Cost of Methane with a 3 percent discount rate) or \$255–357 million per year (using a 3 percent discount rate to calculate the present value of future annual cost savings, and using model averages of the Social Cost of Methane with a 3 percent discount rate).”).
- ⁸² U.S. ENVIRONMENTAL PROTECTION AGENCY, REGULATORY IMPACT ANALYSIS OF THE FINAL OIL AND NATURAL GAS SECTOR: EMISSION STANDARDS FOR NEW, RECONSTRUCTED, AND MODIFIED SOURCES, EPA-452/R-16-002 (MAY 2016); U.S. ENVIRONMENTAL PROTECTION AGENCY, REGULATORY IMPACT ANALYSIS FOR THE PROPOSED REVISIONS TO THE EMISSION GUIDELINES FOR EXISTING SOURCES AND SUPPLEMENTAL PROPOSED NEW SOURCE PERFORMANCE STANDARDS IN THE MUNICIPAL SOLID WASTE LANDFILLS SECTOR, EPA-452/R-15-008 (August 2015).
- ⁸³ U.S. BUREAU OF OCEAN ENERGY MANAGEMENT, 2017–2022 OCS OIL AND GAS LEASING DRAFT PROPOSED PROGRAM at B-9 (Jan. 2015), *available at* <http://www.boem.gov/2017-2022-DPP/>.
- ⁸⁴ *See* U.S. BUREAU OF LAND MANAGEMENT, Competitive Oil and Gas Lease Sale 13-14 (Jan. 26, 2016), *available at* http://www.blm.gov/style/medialib/blm/mt/blm_programs/energy/oil_and_gas/leasing/lease_sales/2016/jan26_2015/oct__28_posting.Par.85050.File.dat/January2016leasesaleDNA_10615.pdf (“The BLM finds that using SCC in its NEPA analysis for this proposed action, which is not a rulemaking, would not be useful....”).
- ⁸⁵ For more information on the development and methodology behind the Social Cost of Carbon and Social Cost of Methane, *see* Institute for Policy Integrity, Environmental Defense Fund, and Natural Resources Defense Council, *Joint Comments on RIN 1004-AE14, Waste Prevention, Production Subject to Royalties, and Resource Conservation* (Apr. 22, 2016), *available at* http://policyintegrity.org/documents/Joint_Comments_to_BLM_April2016.pdf.
- ⁸⁶ INTERAGENCY WORKING GROUP ON THE SOCIAL COST OF CARBON, TECHNICAL SUPPORT DOCUMENT: TECHNICAL UPDATE OF THE SOCIAL COST OF CARBON FOR REGULATORY IMPACT ANALYSIS UNDER EXECUTIVE ORDER 12,866 (2015); *see also* INTERAGENCY WORKING GROUP ON THE SOCIAL COST OF CARBON, TECHNICAL SUPPORT DOCUMENT: TECHNICAL UPDATE OF THE SOCIAL COST OF CARBON FOR REGULATORY IMPACT ANALYSIS UNDER EXECUTIVE ORDER 12,866 (2013), *available at* <http://www.whitehouse.gov/sites/default/files/omb/assets/inforeg/technical-update-social-cost-of-carbon-for-regulator-impact-analysis.pdf>.
- ⁸⁷ Alex L. Marten et al., Incremental CH₄ and N₂O Mitigation Benefits Consistent With the US Government’s SCCO₂ Estimates, CLIMATE POLICY (2014).
- ⁸⁸ Specifically, Marten et al. builds on the methodology used by the Interagency Working Group to develop the SCC. The study maintains the same three integrated assessment models, five socioeconomic-emissions scenarios, equilibrium climate sensitivity distribution, three constant discount rates, and aggregation approach that were agreed upon by the Interagency Working Group. Consequently, many of the key assumptions underlying the Social Cost of Methane estimates have already gone through a transparent, consensus-driven, publicly reviewed, regularly updated process, since they were borrowed from the Interagency Working Group’s vetted methodology. Marten et al.’s Social Cost of Methane estimates also directly account for the quicker time horizon of methane’s effects compared to carbon dioxide, include the indirect effects of methane on radiative forcing, and reflect the complex, nonlinear linkages along the pathway from methane emissions to monetized damages. Marten et al. was published in a peer reviewed economics journal, and EPA conducted additional internal and peer review of this methodology. However, the Social Cost of Methane methodology does not yet fully reflect the effects of methane oxidizing in the atmosphere over time and becoming carbon dioxide. *See* U.S. ENVIRONMENTAL PROTECTION AGENCY, REGULATORY IMPACT ANALYSIS FOR THE PROPOSED EMISSION STANDARDS FOR NEW AND MODIFIED SOURCES IN THE OIL AND NATURAL GAS SECTOR, EPA-452/R-15-002, 4-37 (August 2015), *available at* https://www3.epa.gov/airquality/oilandgas/pdfs/og_prop_ria_081815.pdf.

- ⁸⁹ U.S. ENVIRONMENTAL PROTECTION AGENCY, WHITE-PAPER ON VALUING METHANE EMISSIONS CHANGES IN REGULATORY BENEFIT-COST ANALYSIS, PEER REVIEW CHARGE QUESTIONS, AND RESPONSES, *available at* <https://www3.epa.gov/climatechange/pdfs/social%20cost%20methane%20white%20paper%20application%20and%20peer%20review.pdf>.
- ⁹⁰ See Institute for Policy Integrity, Environmental Defense Fund, and Natural Resources Defense Council, *Joint Comments on RIN 1004-AE14, Waste Prevention, Production Subject to Royalties, and Resource Conservation* (April 22, 2016), *available at* http://policyintegrity.org/documents/Joint_Comments_to_BLM_April2016.pdf.
- ⁹¹ See Exec. Order No. 13,563, 76 Fed. Reg. 3821 (Jan. 18, 2011).
- ⁹² 43 U.S.C. § 1701(a)(9).
- ⁹³ See SECRETARIAL ORDER NO. 3338, *supra* note 2 at 4; INSPECTOR GENERAL REPORT, *supra* note 37; U.S. U.S. GOV'T ACCOUNTABILITY OFFICE, COAL LEASING REPORT, *supra* note 5.
- ⁹⁴ OMB Circular A-4, *supra* note 16 at 2-3.
- ⁹⁵ See Exec. Order No. 13563, 76 Fed. Reg. 3821 (Jan. 21, 2011); Exec. Order No. 12866, 58 Fed. Reg. 51735 (Oct. 4, 1993); Circular A-4, *supra* note 16 at 2-3; U.S. ENVIRONMENTAL PROTECTION AGENCY, GUIDELINES FOR PREPARING ECONOMIC ANALYSES 11-2 (Dec. 17, 2010).
- ⁹⁶ See Spencer Reeder and James H. Stock, *Federal Coal Leasing Reform Options: Effects on CO₂ Emissions and Energy Markets: Executive Summary* (Feb. 2016); Vulcan Philanthropy, *Federal Coal Leasing Reform Options: Effects on CO₂ Emissions and Energy Markets: Summary of Modeling Results* (Jan. 26, 2016); Jayni Foley Hein and Peter Howard, *Illuminating the Hidden Costs of Coal*, INSTITUTE FOR POLICY INTEGRITY, NYU SCHOOL OF LAW (Dec. 2015); A.J. Krupnick et. al., *Putting a Carbon Charge on Federal Coal: Legal and Economic Issues*, Resources for the Future Discussion Paper 15-13 (Mar. 2015); *see also* David Hayes and James Stock, "The Real Cost of Coal," N.Y. TIMES (Mar. 24, 2015), http://www.nytimes.com/2015/03/24/opinion/the-real-cost-of-coal.html?_r=1.
- ⁹⁷ Circular A-4, *supra* note 16 at 10 ("Even when a benefit or cost cannot be expressed in monetary units, you should still try to measure it in terms of its physical units. If it is not possible to measure the physical units, you should still describe the benefit or cost qualitatively").
- ⁹⁸ See SECRETARIAL ORDER NO. 3338, *supra* note 2 at 7.
- ⁹⁹ Hein and Howard, *Illuminating the Hidden Costs of Coal*, *supra* note 9 at 1. One limitation of the NYU study is that it used an average elasticity of supply of between 1 and 3 to account for substitution effects from higher royalty rates between coal produced from different basins (federal, state, and private), and among coal, natural gas, oil, and renewables. The Vulcan study, by contrast, modeled the effect of different royalty rates scenarios using ICF International's Integrated Planning Model, which is commonly used by U.S. EPA and other agencies.
- ¹⁰⁰ Hein & Howard, *Illuminating the Hidden Costs of Coal*, *supra* note 9 at 7.
- ¹⁰¹ Reeder and Stock, *Federal Coal Leasing Reform Options: Effects on CO₂ Emissions and Energy Markets: Executive Summary*, *supra* note 96 at 4.
- ¹⁰² *Id.* at 1.
- ¹⁰³ *Id.* at 7.
- ¹⁰⁴ SECRETARIAL ORDER NO. 3338, *supra* note 2 at 8.
- ¹⁰⁵ U.S. BUREAU OF LAND MANAGEMENT, *Final Environmental Impact Statement for the Wright Area Coal Lease Applications*, Vol. 1, at 4-137 (July 2010), *available at* <http://www.blm.gov/style/medialib/blm/wy/information/NEPA/hpdo/Wright-Coal/feis.Par.33083.File.dat/01WrightCoalVol1.pdf> (hereinafter "Wright Area EIS").
- ¹⁰⁶ See, e.g., Christophe McGlade and Paul Ekins, "The Geographical Distribution of Fossil Fuels Unused When Limiting Global Warming to 2°C", 517 NATURE 187, 187-190 (Jan. 8, 2015) (finding that globally over 80% of current coal reserves should remain unused from 2010 to 2050 to meet the target of 2 degrees Celsius).
- ¹⁰⁷ THE WHITE HOUSE, OFFICE OF THE PRESS SECRETARY, FACT SHEET: U.S. REPORTS ITS 2025 EMISSIONS TARGET TO THE UNFCCC (Mar. 31, 2015), *available at* <https://www.whitehouse.gov/the-press-office/2015/03/31/fact-sheet-us-reports-its-2025-emissions-target-unfccc>.
- ¹⁰⁸ 43 U.S.C. § 1702(c).
- ¹⁰⁹ 43 U.S.C. § 1701(a)(1).
- ¹¹⁰ 43 U.S.C. § 1701(a)(8).
- ¹¹¹ 43 U.S.C. § 1712(a)-(c)(1).
- ¹¹² *Id.* § 1702(c) (emphasis added).
- ¹¹³ *Id.* (emphasis added).

- ¹¹⁴ Exec. Order No. 13,693, 80 Fed. Reg. 15,871 (March 25, 2015).
- ¹¹⁵ Peter Erickson and Michael Lazarus, *How Would Phasing Out U.S. Federal Leases for Fossil Fuel Extraction Affect CO₂ Emissions and 2°C Goals?* Working Paper No. 2016-12, STOCKHOLM ENVIRONMENT INSTITUTE (2016), available at <https://www.sei-international.org/mediamanager/documents/Publications/Climate/SEI-WP-2016-US-fossilfuel-leases-climate.pdf>.
- ¹¹⁶ *Id.* at 22.
- ¹¹⁷ *Wright Area EIS*, *supra* note 105 at 4-141 (“It is not likely that selection of the No Action alternatives would result in a decrease of U.S. CO₂ emissions attributable to coal mining and coal-burning power plants in the longer term, because there are multiple other sources of coal that, while not having the cost, environmental, or safety advantages, could supply the demand for coal beyond the time that the Black Thunder, Jacobs Ranch, and North Antelope Rochelle mines complete recovery of the coal in their existing leases.”).
- ¹¹⁸ *WildEarth Guardians, v. U.S. Bureau of Land Management*, Case No. 15-8109 (10th Cir. 2016). The Institute for Policy Integrity submitted an amicus brief in support of petitioners-appellants in this case, which focused on substitution analysis. See Brief of the Institute for Policy Integrity at New York University School of Law as Amicus Curiae in Support of Petitioners-Appellants, Case No. 15-8109 (10th Cir., Feb. 5, 2016), available at http://policyintegrity.org/documents/10th_Cir_BLM_Brief.pdf (hereinafter, “Policy Integrity 10th Circuit Amicus Brief”).
- ¹¹⁹ Policy Integrity 10th Circuit Amicus Brief, *supra* note 118 at 25-27. The U.S. Court of Appeals for the Eighth Circuit criticized the Surface Transportation Board for “illogical[ly]” concluding that approving new railroad lines to Powder River Basin coal mines would not affect the demand for and consumption of coal, and for ignoring “widely used” models capable of forecasting such effects. *Mid States Coalition for Progress v. Surface Transp. Bd.*, 345 F.3d 520, 549–550 (8th Cir. 2003). “On remand, the Board undertook just such a study using the Energy Information Administration’s (EIA) National Energy Modeling System (NEMS) . . . [which] not only forecasts coal supply and demand but also quantifies environmental impacts.” *Mayo Foundation v. Surface Transp. Bd.*, 472 F.3d 545, 555 (8th Cir. 2006). The U.S. District Court of Colorado “[could] not make sense” of the Forest Service’s assumption that approving road construction through national forests to reach Colorado coal mines would not increase coal production and consumption. *High Country Conservation Advocates v. Forest Service*, 52 F. Supp. 3d 1174, 1197 (D. Colo. 2014).
- ¹²⁰ For more information on the benefits and drawbacks of these three models for Interior’s coal PEIS, and detailed selection criteria, see Peter H. Howard, *The Bureau of Land Management’s Modeling Choice for the Federal Coal Programmatic Review*, INSTITUTE FOR POLICY INTEGRITY, NYU SCHOOL OF LAW (June 2016), available at http://policyintegrity.org/files/publications/BLM_Model_Choice.pdf.
- ¹²¹ *Id.*
- ¹²² *Id.*
- ¹²³ U.S. BUREAU OF LAND MANAGEMENT, FACT SHEET: MODERNIZING THE FEDERAL COAL PROGRAM 3 (Jan. 16, 2016), available at http://www.blm.gov/style/medialib/blm/wo/Communications_Directorate/public_affairs/news_release_attachments.Par.47489.File.dat/Coal%20Reform%20Fact%20Sheet%20Final.pdf.
- ¹²⁴ 30 U.S.C. §209.
- ¹²⁵ 43 C.F.R. §§3473.3-2(e), 3485.2(c)(1).
- ¹²⁶ Mark Haggerty, An Assessment of U.S. Federal Coal Royalties Current Royalty Structure, Effective Royalty Rates, and Reform Options, HEADWATERS ECONOMICS 8 (Jan. 2015), available at <http://headwaterseconomics.org/wphw/wp-content/uploads/Report-Coal-Royalty-Valuation.pdf>.
- ¹²⁷ U.S. GOV’T ACCOUNTABILITY OFFICE, COAL LEASING REPORT, *supra* note 5 at 25.
- ¹²⁸ The White House, Office of the Press Secretary, Remarks of President Barack Obama – State of the Union Address As Delivered (Jan. 13, 2016), available at <https://www.whitehouse.gov/the-press-office/2016/01/12/remarks-president-barack-obama-%E2%80%93-prepared-delivery-state-union-address>.
- ¹²⁹ SECRETARIAL ORDER NO. 3338, *supra* note 2 at 7.
- ¹³⁰ Of almost 450 square miles of disturbed lands in Wyoming, Montana and North Dakota, only 46 square miles have been successfully reclaimed. NATIONAL WILDLIFE FEDERATION, NATURAL RESOURCES DEFENSE COUNCIL, AND WESTERN ORGANIZATION OF RESOURCE COUNCILS, *Undermined Promise II* at 4 (2015), available at <http://www.underminedpromise.org/UnderminedPromiseII.pdf>.
- ¹³¹ Michael Corkery, “Regulators Fear \$1 Billion Coal Cleanup Bill,” N.Y. TIMES (June 6, 2016), available at http://www.nytimes.com/2016/06/07/business/dealbook/regulators-fear-1-billion-coal-cleanup-bill.html?smprod=nytcore-iphone&smid=nytcore-iphone-share&_r=0.

¹³² See 43 C.F.R. § 3422.1(c)(2).

¹³³ See 30 U.S.C. § 1259.

¹³⁴ Hein & Howard, *Reconsidering Coal's Fair Market Value*, *supra* note 9 at 5-6.

¹³⁵ *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.

¹³⁶ See BOEM 2017-2022 PROPOSED PROGRAM, *supra* note 12 at 5-20, 8-1 to 8-19.

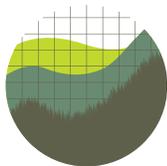
¹³⁷ See 30 U.S.C. § 184.

¹³⁸ 30 U.S.C. § 1259.

¹³⁹ 30 U.S.C. §1202(c)-(e).

¹⁴⁰ See 30 U.S.C. § 184.

¹⁴¹ These recommendations will be detailed in a separate report.



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The Opinion Pages | OP-ED CONTRIBUTORS

The Real Cost of Coal

By DAVID J. HAYES and JAMES H. STOCK MARCH 24, 2015

CONGRESS long ago established a basic principle governing the extraction of coal from public lands by private companies: American taxpayers should be paid fair value for it. They own the coal, after all.

Lawmakers set a royalty payment of 12.5 percent of the sale price of the coal in 1976. Forty years later, those payments remain stuck there, with actual collections often much less. Studies by the Government Accountability Office, the Interior Department's inspector general and nonprofit research groups have all concluded that taxpayers are being shortchanged.

This is no small matter. In 2013, approximately 40 percent of all domestic coal came from federal lands. A recent study by the independent nonprofit research group Headwaters Economics estimates that various reforms to the royalty valuation system would have generated \$900 million to \$5.6 billion more overall between 2008 and 2012.

This failure by the government to collect fair value for taxpayer coal is made more troubling by the climate-change implications of burning this fossil fuel. Taxpayers are already incurring major costs in responding to the effects of global warming. Coastal infrastructure is being battered by sea rise and storm surges; forests are being devastated by climate-aided pest infestations; and studies are

suggesting that temperature rises have increased the likelihood of devastating droughts in California.

Moreover, as the Council of Economic Advisers documented in a report last July because of the long-lived nature of greenhouse gases in the atmosphere, these costs will continue to rise.

The Interior Department, which manages energy resources on federal lands, has acknowledged that reforms are needed. In January, the department took a first step by proposing more scrutiny on the self-reported sales that coal companies use as the basis for royalty payments. It also must address other well-documented problems, including large discounts routinely applied to these payments, and noncompetitive lease sales.

But the department should not stop there. The federal government should also take into account the economic consequences of burning coal when pricing this fuel. The price for taxpayer-owned coal should reflect, in some measure, the added costs associated with the impacts of greenhouse gas emissions.

This is not a novel concept. Some utilities and other businesses already are applying a so-called carbon adder to account for the environmental costs of greenhouse gas emissions. These adders are used for planning purposes to compare the costs of fossil fuel and renewable electricity generation and have not been charged to consumers.

But the Interior Department should take a cue from the private sector and go a step further by imposing a carbon adder on coal sales. Money collected from the adder could be phased in to avoid sharp price disruptions and used to help defray the growing, uncompensated costs that the government is incurring in responding to climate change.

Computing the appropriate carbon adder will not be easy, but that should not deter the Interior Department from accounting for a meaningful portion of coal's climate impact when updating the federal coal royalty rate.

Industry is sure to oppose this, even though coal is the planet's most carbon-intensive energy source. Others will argue that an across-the-board carbon tax is a more efficient way to account for climate impacts. With no near-term prospects for such legislation, however, the Interior Department should set a royalty that provides fair value to taxpayers by addressing the climate costs of burning coal.

The greenhouse gas burden from coal taken from government lands can no longer be ignored. Using a carbon adder to increase the royalties that taxpayers receive is a sensible step in the right direction.

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