Modernizing Management of Offshore Oil and Gas in Federal Waters

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Summary

Offshore drilling has been thrust back into the spotlight by the Trump Administration's focus on "energy dominance." While it is unlikely that leasing will take place in all areas included in the Administration's proposed plan, its enormous scope has raised serious questions about the government's capacity to properly plan for potential activities and evaluate impacts, and it has again prompted calls to amend the laws governing Outer Continental Shelf (OCS) oil and gas. This Article recognizes the need for comprehensive ocean legislation, but recognizing that systemic change will take time, focuses on reforms that are generally consistent with the existing statutory framework. It provides background on the statutory scheme governing OCS activities, summarizes some of the reasons Congress should update and amend the law, touches on attempts at legislative reform, and includes specific recommended changes in four main categories: (1) overall policy and overarching legal structure; (2) planning and leasing; (3) operations and response; and (4) financial responsibility and funding.

There have been three major offshore oil disasters in the United States: the Santa Barbara blowout in 1969, the *Exxon Valdez* running aground in Prince William Sound in 1989, and the *Deepwater Horizon* exploding and sinking in the Gulf of Mexico in 2010. The Santa Barbara spill encouraged the burgeoning environmental movement and contributed to the momentum for seminal national legislation like the National Environmental Policy Act (NEPA).[1] The *Exxon Valdez* disaster highlighted deficiencies in the design of tankers, the liability regime, and the framework for responding to a major spill, which led the U.S. Congress to pass the Oil Pollution Act of 1990 (OPA 90).[2] In the wake of the largest of these spills, the *Deepwater Horizon*, Congress took no action to address the apparent problems related to government planning, management, and oversight of Outer Continental Shelf (OCS) oil and gas activities as well as industry preparedness for catastrophic spills.

Congress' failure to act is not due to a lack of needed updates. The expert commission created by President Barack Obama, the National Commission on the BP *Deepwater Horizon* Oil Spill and Offshore Drilling, recommended significant statutory changes that could help strengthen management, prevent a disaster like the *Deepwater Horizon* in the future, and improve preparedness and response.[3] The 111th Congress held hearings and considered a series of bills, but it ultimately failed to pass reform legislation in the aftermath of the *Deepwater Horizon*.[4] Subsequent Congresses have debated a variety of OCS-related bills, including those that would have expedited offshore oil and gas leasing by circumventing existing procedures.[5]

More recently, offshore drilling has been thrust back into the national spotlight by the Donald Trump Administration's focus on "energy dominance." President Trump's direction to review existing OCS-related plans

1. 42 U.S.C. §§4321-4370h (as amended by Pub. L. No. 111-8, 123 Stat. 729 (2009)), ELR Stat. NEPA §§2-209; *see also generally* Teresa Sabol Spezio, *The Santa Barbara Oil Spill and Its Effect on United States Environmental Policy*, 10(8) Sustainability 2750 (2018), *available at* https://www.mdpi.com/2071-1050/10/8/2750.
2. OPA 90, 33 U.S.C. §§2701-2762, ELR Stat. OPA §§1001-7001.
3. *See* National Commission on the BP *Deepwater Horizon* Oil Spill and Offshore Drilling, Deep Water: The Gulf Oil Disaster and the Future of Offshore Drilling 249-91 (2011) [hereinafter National Commission] (recommending widespread changes in the wake of the *Deepwater Horizon* disaster).
4. The 111th Congress did pass the Resources and Ecosystems Sustainability, Tourist Opportunities, and Revived Economies of the Gulf Coast States Act of 2012 (RESTORE Act), which dealt with the allocation of civil penalties resulting from the *Deepwater Horizon* spill. *See* the RESTORE Act of 2012; Moving Ahead for Progress in the 21st Century Act, div. A, tit. I, subtit. F, 126 Stat. 588 (2012)).
5. *See*, *e.g.*, Offshore Energy and Jobs Act, H.R. 2231, 113th Cong. (2013) (calling for expanding offshore leasing, weakening environmental protections).

and rules[6] resulted in release of the 2019-2024 National Outer Continental Shelf Oil and Gas Leasing Draft Proposed Program (DPP), in which the Administration proposed making virtually the entire OCS available for leasing.[7] While it is unlikely that leasing will take place in all areas included in the DPP, the enormous scope of the proposal raised serious questions about the government's capacity to properly plan for potential activities and evaluate impacts on such a scale, and it again prompted calls to amend the laws that govern offshore oil and gas activities.[8]

This call for change is emblematic of the broader need to transition to renewable sources of energy and to modernize the governance structure for ocean resources in the United States. The grave threats posed by climate change and ocean acidification necessitate systemic change in the use of fossil fuels in the United States. An overhaul of the nation's OCS energy policy must be part of that change. More broadly, oil and gas extraction is one of many ocean activities regulated separately under a siloed system of management. Calls for a single governing law for the oceans go back decades and have substantial merit.[9] Part I of this Article briefly makes the case for comprehensive reform of energy and ocean governance.

At the same time as we advocate for comprehensive and bold legislation for the ocean, we recognize that systemic change will take time and that offshore oil and gas activities will continue until a transition is complete. Accordingly, Congress must also reform and modernize the laws that govern OCS oil and gas activities. To that end, the bulk of this Article focuses on reforms that are generally consistent with the existing statutory framework, and would facilitate better decisionmaking about whether, when, where, and under what conditions to allow offshore oil and gas activities.

Part II provides background on the statutory scheme that governs OCS oil and gas activities, briefly summarizes some of the reasons Congress should update and amend the law, and touches on some attempts at legislative reform. Part III includes specific recommended statutory changes in four main categories: (1) overall policy and overarching legal structure; (2) planning and leasing; (3) operations and response; and (4) financial responsibility and funding. Part IV concludes with a recommended path forward.

I. Comprehensive Reform

Currently, decisions about whether and under what conditions to allow offshore oil and gas activities may be made without accounting for the clear need to transition to renewable sources of energy or a holistic view of activities happening in the ocean. This part briefly explains this context and the clear need for fundamental reform as background to the targeted changes we propose in the remainder of the Article.

Climate change science was nascent in 1978 when Congress last made significant revisions to the Outer Continental Shelf Lands Act (OCSLA).[10] It is, therefore, unsurprising that the statute does not recognize the finite nature of fossil fuels, the impact that burning them is having on the environment, or the need to plan for a transition away from them. Now, however, the science is clear,[11] as is the imperative to take steps to reduce human-caused emissions of greenhouse gases and to help adapt to significant, ongoing changes.

A full description of the science behind climate change and the impacts it is having on communities, economies, and ecosystems is beyond the scope of this Article.[12] In this context, however, we highlight the potential impacts to the ocean and coastal communities:

> Rising water temperatures, ocean acidification, retreating arctic sea ice, sea level rise, high-tide flooding, coastal erosion, higher storm surge, and heavier precipitation events threaten our oceans and coasts. These effects are projected to continue, putting ocean and marine species at risk, decreasing the productivity of certain fisheries, and

6. Implementing an America-First Offshore Energy Strategy, Exec. Order No. 13795 of April 28, 2017, 82 Fed. Reg. 20815, 20815-18 (May 3, 2017).
7. Bureau of Ocean Energy Management (BOEM), 2019-2024 National Outer Continental Shelf Oil and Gas Leasing Draft Proposed Program 1 (2018) ("This Draft Proposed Program (DPP) would make more than 98 percent of the OCS available to consider for oil and gas leasing during the 2019-2024 period.").
8. *See*, *e.g.*, Clean Ocean and Safe Tourism (COAST) Anti-Drilling Act of 2019; Coastal Economies Protection Act of 2019; California Clean Coast Act of 2019; New England Coastal Protection Act of 2019; Florida Coastal Protection Act of 2019; West Coast Ocean Protection Act of 2019; Stop Arctic Ocean Drilling Act of 2019; Defend Our Coast Act of 2019.
9. *See*, *e.g.*, Pew Oceans Commission, America's Living Oceans: Charting a Course for Sea Change 102 (2003) (calling on Congress to enact a National Ocean Policy Act that, among other things, establishes unified principles and standards for ocean governance); U.S. Commission on Ocean Policy, An Ocean Blueprint for the 21st Century Final Report 102 (2004) (recommending that Congress enact an ecosystem-based offshore management regime).
10. *See generally* Nathaniel Rich, *Losing Earth: The Decade We Almost Stopped Climate Change*, N.Y. Times Mag., Aug. 1, 2018, https://www.nytimes.com/interactive/2018/08/01/magazine/climate-change-losing-earth.html.
11. Donald J. Wuebbles et al., *Executive Summary*, *in* Climate Science Special Report: Fourth National Climate Assessment, Volume I, at 12 (D.J. Wuebbles et al. eds., U.S. Global Change Research Program 2017) ("it is *extremely likely* that human influence has been the dominant cause of the observed warming since the mid-20th century. For the warming over the last century, there is no convincing alternative explanation supported by the extent of the observational evidence."), https://science2017.globalchange.gov/downloads/CSSR_Executive_Summary.pdf.
12. Such a review was completed in the fall of 2018. *See* U.S. Global Research Program, Impacts, Risks, and Adaptation in the United States: Fourth National Climate Assessment, Volume II (D.R. Reidmiller et al. eds., 2018), https://nca2018.globalchange.gov/downloads/NCA4_2018_FullReport.pdf.

> threatening communities that rely on marine ecosystems for livelihoods and recreation. . . .[13]

Actions to reduce emissions of greenhouse gases are needed: "[w]ithout significant reductions in global greenhouse gas emissions and regional adaptation measures, many coastal regions will be transformed by the latter part of this century, with impacts affecting other regions and sectors."[14]

Reducing greenhouse gas emissions will require a fundamental change in the manner in which the United States develops and uses energy. Full consideration of whether, and under what circumstances, the federal government allows the extraction and burning of offshore oil and gas must be part of that change. We do not advocate a particular solution here. Rather, it is sufficient to acknowledge that a transition to renewable energy is necessary and that future extraction should be considered in the context of that needed transition.

Similarly, extracting oil and gas from under the ocean is only one of many ocean uses, and the energy obtained is only one of the many benefits received from the ocean. Roughly 40% of the U.S. population lives in a coastal county, and around the world, 1.9 billion people make coastal areas home.[15] More than 90% of the world's trade is carried by ocean-based transportation, and the ocean produces more than 150 million metric tons of seafood annually, providing the primary source of protein for billions of people.[16] The ocean provides 90% of the world's habitat and hosts animals ranging from the largest, the blue whale, to microscopic plants, animals, and bacteria.[17] The ocean also has buffered many of the most immediate consequences of carbon dioxide pollution, absorbing 93% of the total excess heat energy taken up by greenhouse gas in the atmosphere.[18] And the ocean can be an important source of renewable energy to help transition away from fossil fuels.[19]

Despite its importance, the United States has no single law governing ocean resources. Rather, as exemplified by OCSLA, there are a series of federal laws affecting ocean resources and management. These statutes are defined by "a 'use-by-use,' 'issue-by-issue,' and 'pollutant-by-pollutant' approach to oceans policy," and are "administered by over fifty federal agencies, often with joint responsibility for implementation and enforcement of the same statute."[20] By way of example, in addition to the agencies regulating offshore oil and gas directly, "[d]ecisions about Arctic Ocean resources fall under the purview of the . . . U.S. Fish & Wildlife Service (FWS), U.S. Coast Guard (USCG), [U.S.] Environmental Protection Agency (EPA), and National Marine Fisheries Service (NMFS), among others. These agencies are all separate entities, most of them located in different Cabinet departments. . . ."[21]

There is a clear need for holistic management. As stated above, this idea is not new.[22] It dates back several decades with a more recent recognition from President Obama that federal agencies with management authority over ocean resources need to better coordinate. To address that need, President Obama issued an Executive Order creating the National Ocean Policy and a White House-level National Ocean Council that brought together leaders from federal agencies with a stake in ocean management.[23] Unlike forests and federal lands,[24] however, there is still no unifying federal statute addressing management of the ocean.

In summary, under existing law, choices about offshore oil and gas may be made without full consideration of impacts to the ocean or on climate change. The legislative changes needed to address both deficiencies are beyond the

13. *Summary Findings*, *in id*. at 31 (Finding 11).
14. *Id*. *See also Sea Change: Impacts of Climate Science on Our Oceans and Coasts: Hearing Before the Subcommittee on Environment of the House Committee on Science, Space, and Technology*, 116th Cong. (2019) (written testimony of Sarah Cooley, Director, Ocean Acidification Program, Ocean Conservancy) (summarizing the effects of climate change and ocean acidification on ocean ecosystems).
15. *See* National Oceanic and Atmospheric Administration (NOAA) Office for Coastal Management, *Fast Facts: Economics and Demographics*, https://coast.noaa.gov/states/fast-facts/economics-and-demographics.html (last visited Mar. 26, 2019); Matti Kummu et al., *Over the Hills and Further Away From Coast: Global Geospatial Patterns of Human and Environment Over the 20th-21st Centuries*, 11 Envtl. Res. Letters (2016), *available at* https://iopscience.iop.org/article/10.1088/1748-9326/11/3/034010.
16. *See*, *e.g.*, UN-Business Action Hub, *IMO (International Maritime Organization)*, https://business.un.org/en/entities/13 (last visited Mar. 20, 2019); Food and Agriculture Organization of the United Nations, The State of World Fisheries and Aquaculture 2018, at iv-v (2018) ("Total fish production in 2016 reached an all-time high of 171 million tonnes, of which 88 percent was utilized for direct human consumption, thanks to relatively stable capture fisheries production, reduced wastage and continued aquaculture growth. This production resulted in a record-high per capita consumption of 20.3 kg in 2016.").
17. United Nations Educational, Scientific, and Cultural Organization, *Facts and Figures on Marine Biodiversity*, http://www.unesco.org/new/en/natural-sciences/ioc-oceans/focus-areas/rio-20-ocean/blueprint-for-the-future-we-want/marine-biodiversity/facts-and-figures-on-marine-biodiversity/ (last visited Mar. 20, 2019).
18. Climate Science Special Report: Fourth National Climate Assessment, Volume I, *supra* note 11, ch. 13.
19. *See*, *e.g.*, Mehmet Melikoglu, *Current Status and Future of Ocean Energy Sources: A Global Review*, 148 Ocean Engineering 563-73 (2018), *available at* https://www.sciencedirect.com/science/article/pii/S002980181730714X.
20. Martin H. Belsky, *The Ecosystem Model Mandate for a Comprehensive United States Ocean Policy and Law of the Sea*, 26 San Diego L. Rev. 417, 430 (1989).
21. Michael LeVine et al., *Oil and Gas in America's Arctic Ocean: Past Problems Counsel Precaution*, 37 Seattle U. L. Rev. 1271, 1303 (2014) (internal citations and punctuation omitted); *see also* Belsky, *supra* note 20, at 430 n.94 (listing statutes affecting ocean resources).
22. *See* Belsky, *supra* note 20, at 417-48 (tracing the history of efforts at holistic management); Pew Oceans Commission, *supra* note 9, at 102 (calling on Congress to enact a National Ocean Policy Act that, among other things, establishes unified principles and standards for ocean governance); U.S. Commission on Ocean Policy, *supra* note 9, at 102 (recommending that Congress enact an ecosystem-based offshore management regime).
23. Stewardship of the Ocean, Our Coasts, and the Great Lakes, Exec. Order No. 13547 of July 19, 2010, 75 Fed. Reg. 43023 (July 22, 2010). This policy has been superseded by President Trump. *See* Ocean Policy to Advance the Economic, Security, and Environmental Interests of the United States, Exec. Order No. 13840 of June 19, 2018, 83 Fed. Reg. 29431 (June 22, 2018), https://www.whitehouse.gov/presidential-actions/executive-order-regarding-ocean-policy-advance-economic-security-environmental-interests-united-states/. This interagency management concept is also reflected in an Executive Order issued by President Trump that maintains White House leadership, replacing the Obama National Ocean Council with an interagency Ocean Policy Committee that has a similar structure but with additions such as USCG and the U.S. Army Corps of Engineers. *See* Exec. Order No. 13840, *infra* note 98.
24. *See* National Forest Management Act of 1976, 16 U.S.C. §§1600-1614; Federal Land Policy and Management Act of 1976, 43 U.S.C. §§1701-1787.

scope of this Article. The need for fundamental reform, however, provides context for the remainder of the Article. While acknowledging the need for those changes, we recognize that significant improvements are necessary and can be made within the current framework for extracting oil and gas. Those changes are the focus of this Article.

II. Overview of Existing OCS Legislation, Need for Change, and Prior Reform Efforts

Some background and context about the relevant statutes is necessary to understand the needed reforms. This part provides a brief overview and description of OCSLA,[25] certain parts of the Clean Water Act (CWA),[26] and OPA 90.[27] It also reviews some of the reasons that Congress should take action to amend those statutes, discusses regulatory changes that have been implemented, and summarizes some past and ongoing attempts to enact legislation related to OCS oil and gas activities.

A. History and Description of Relevant OCS Legislation

OCSLA governs planning, leasing, exploration, and development of offshore oil and gas resources in federal waters. When Congress enacted OCSLA in 1953, it established federal jurisdiction over OCS lands and gave the Secretary of the Interior authority to lease those lands for mineral development.[28] Congress amended the law to its current form in 1978,[29] and there have been few significant changes to the provisions that govern OCS oil and gas activities since that time.[30]

OCSLA establishes a four-stage process that covers planning, leasing, exploration, and development and production of oil and gas on OCS lands. Other articles provide substantial details on this framework.[31] For purposes of this Article, it is sufficient to note that the stages are:

- **Planning**. At the initial planning stage, the Secretary of the Interior develops a nationwide leasing program. The program establishes a schedule of proposed lease sales to be held in different OCS planning areas over a five-year period.
- **Leasing**. If the Secretary of the Interior elects to hold a lease sale included in the five-year program, the U.S. Department of the Interior (DOI) prepares an environmental analysis for that lease sale and holds a competitive auction. Successful bidders acquire the conditional right to explore, develop, and produce oil and gas on specific OCS lease tracts.
- **Exploration**. OCS leaseholders apply for government approval to drill exploration wells on their lease tracts. They may also apply to conduct seismic testing and similar activities.[32] OCS leaseholders must submit plans for their proposed exploration activities, and those plans are subject to a variety of approval processes.
- **Development and production**. If exploration activities are successful and the leaseholder determines that development is commercially viable, the company may apply for approval to develop and produce the oil and gas resources on their lease tracts. Lessees must submit development and production plans to government agencies for approval.

Spill response and remediation are covered by a separate statutory scheme included in the CWA[33] and OPA 90.[34] CWA §311(j) establishes a tiered national oil spill response system and sets forth requirements designed to promote oil spill preparedness, planning, and response capacity.[35] In the event of an oil spill, the CWA provides a process to assess damage to natural resources and work toward restoration.[36] As is relevant here, OPA 90 guides response to, remediation of, and liability for a spill. It ensures responsible parties are strictly liable for the costs of responding to a spill and removing spilled oil. It also establishes penalties and liability limits and authorizes use of the Oil Spill Liability Trust Fund (OSLTF), which may be used to support spill removal and assessment costs under some circumstances.[37] Congress has not updated OPA 90 since enacting it.

OCS oil and gas planning and operations frequently require compliance with other statutes, including NEPA,[38] the Coastal Zone Management Act (CZMA),[39] the Endangered Species Act (ESA),[40] and the Marine Mammal

25. OCSLA, 43 U.S.C. §§1331-1356b.
26. Federal Water Pollution Control Act, 33 U.S.C. §§1251-1388, ELR Stat. FWPCA §§101-607.
27. OPA 90, 33 U.S.C. §§2701-2762.
28. OCSLA, Pub. L. No. 83-212, 67 Stat. 462 (1953) (codified at 43 U.S.C. §§1331-1356b).
29. OCSLA Amendments of 1978, Pub. L. No. 95-372, 92 Stat. 629.
30. The Energy Policy Act of 2005 amended OCSLA and gave the U.S. Department of the Interior (DOI) jurisdiction over renewable energy projects on OCS lands. Energy Policy Act of 2005, Pub. L. No. 109-58, 119 Stat. 594. In 2006, Congress enacted the Gulf of Mexico Energy Security Act, which made targeted changes to OCS oil and gas leasing activities and revenue sharing in the Gulf of Mexico region. Gulf of Mexico Energy Security Act of 2006, Pub. L. No. 109-432, div. C, tit. I, §§101-105, 120 Stat. 3000.
31. *See, e.g.*, 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, 271-80 (2011); LeVine et al., *supra* note 21, at 1308-13.
32. While operators must obtain federal permits to undertake seismic testing on the OCS, they do not need to hold an oil and gas lease. 43 U.S.C. §1340(a)(1), (g).
33. FWPCA, 33 U.S.C. §§1251-1388.
34. OPA 90, 33 U.S.C. §§2701-2762.
35. *Id.* §1321(j).
36. *Id.* §2706.
37. 26 U.S.C. §9509.
38. 42 U.S.C. §§4321-4370h (as amended by Pub. L. No. 111-8, 123 Stat. 729 (2009)), ELR Stat. NEPA §§2-209.
39. 16 U.S.C. §§1451-1466, ELR Stat. CZMA §§302-319.
40. 16 U.S.C. §§1531-1544, ELR Stat. ESA §§2-18.

Protection Act (MMPA).[41] These laws guide analysis of potential impacts, opportunities for public participation, and conservation of marine resources.

B. Shortcomings in the Governance of OCS Oil and Gas Activities

The past 40 years have exposed inadequacies and weaknesses in the statutory framework described above. Detailed analyses of these shortcomings can be found in the reports prepared by the National Commission on the BP *Deepwater Horizon* Oil Spill and Offshore Drilling, and other sources.[42] The subsections below summarize some key failings of the existing OCS regime; they are not intended to be an exhaustive catalog.

1. Failure to Prevent a Major Disaster and Ensure Availability of Adequate Response Capacity

The *Deepwater Horizon* disaster killed 11 people, led to a spill that continued unabated for 87 days, and cost BP an estimated $65 billion.[43] This tragedy made clear that the existing governance structure fails to prevent major disasters. It also showed that our capability to recover spilled oil is exceedingly limited: of the more than 210 million barrels of oil that spilled into the Gulf of Mexico, only about 3% was recovered using mechanical skimmers.[44] That recovery rate was similar to the recovery rate after the *Exxon Valdez* disaster 21 years earlier.[45]

Extraction of oil from under the ocean will always involve risk and the potential for human error. However, changes to the statutory regime can help improve decisions about whether, where, when, and under what conditions oil and gas activities are allowed. Statutory reform can also reduce risk, increase preparedness, and improve response capabilities.

2. Failure to Keep Pace With Changed Practices and Risks

OCSLA has not kept pace with rapid changes in offshore drilling technologies and practices and their attendant risks. As noted above, Congress last made significant amendments to OCSLA in 1978. At that time, deepwater drilling was just getting underway, as companies operating in the Gulf of Mexico began drilling in water depths greater than 1,000 feet.[46] By the end of the first decade of the 2000s, oil companies were drilling in water depths down to 10,000 feet, with total well depths of more than 30,000 feet.[47] The new risks and challenges of operating in ever-deeper environments have been well-documented; despite those risks, experts expect companies to continue to expand these activities.[48]

Similarly, there has been a renewed push to explore in Arctic waters—a region in which operators face different challenges and a vastly different environment than the Gulf of Mexico or the California coast.[49] Operations took place in the Arctic in the 1980s,[50] and Shell spent more than $7 billion seeking to drill in the Beaufort and Chukchi Seas from 2007-2015.[51] The significant problems Shell encountered, including the grounding of its *Kulluk* drill rig, evidence the challenges of operating in the Arctic environment.[52]

In general, OCSLA does not differentiate among regions or highlight the risks of operating in frontier areas. DOI has made some regulatory changes to address these challenges—notably, the Arctic-specific regulations govern-

41. 16 U.S.C. §§1361-1423h, ELR Stat. MMPA §§2-410.
42. *See generally* National Commission, *supra* note 3. Staff of the National Commission on the *Deepwater Horizon* Oil Spill and Offshore Drilling developed a series of working papers that touch on a variety of issues related to OCS oil and gas. The staff working papers are available at http://oscaction.org/resource-center/staff-papers/ (last visited Mar. 20, 2019). *See also* DOI, Report to the Secretary of the Interior: Review of Shell's 2012 Alaska Offshore Oil and Gas Exploration Program (2013) (focusing on shortcoming in Arctic region), https://www.doi.gov/sites/doi.gov/files/migrated/news/pressreleases/upload/Shell-report-3-8-13-Final.pdf; Council on Environmental Quality, 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 (2010) (focusing on shortcomings related to the intersection of OCS oil and gas activities and NEPA policies).
43. *See* Ron Bousso, *BP* Deepwater Horizon *Costs Balloon to $65 Billion*, Reuters, Jan. 16, 2018, https://www.reuters.com/article/us-bp-deepwater-horizon/bp-deepwater-horizon-costs-balloon-to-65-billion-idUSKBN1F-50NL. Some experts estimate the cost of the spill was much higher. *See, e.g.*, Yong Gyo Lee et al., *Ultimate Costs of the Disaster: Seven Years After the* Deepwater Horizon *Oil Spill*, Council on Environmental Quality, 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 79 (2018) (concluding ultimate cost to BP was nearly $145 billion).
44. National Commission, *supra* note 3, at 168.
45. *Energy Development on the Continental Shelf and the Future of Our Oceans: Hearing Before the Joint Subcommittee on Energy and Mineral Resources and Subcommittee on Insular Affairs, Oceans, and Wildlife of the House Committee on Natural Resources*, 111th Cong. 2 (2009) (written testimony of Dr. Jeffrey Short, Pacific Science Director, Oceana), https://grist.files.wordpress.com/2010/05/written_statement_of_dr__jeffrey_short_3_24_joint_subcommittee_hearing.pdf.
46. National Commission, *supra* note 3, at 31.
47. *Id.* at 51.
48. *See, e.g.*, National Commission on the BP *Deepwater Horizon* Oil Spill and Offshore Drilling, A Brief History of Offshore Oil Drilling 15 (2010) ("[M]ost experts project the world's appetite for oil and other fuels to grow for the foreseeable future. The role of deepwater oil and gas in providing that energy is also likely to grow.").
49. *See* National Commission, *supra* note 3, at 35; *see also* Oil and Gas and Sulfur Operations on the Outer Continental Shelf—Requirements for Exploratory Drilling on the Arctic Outer Continental Shelf; Final Rule, 81 Fed. Reg. 46478, 46485 (July 15, 2016) (describing unique challenges of Arctic operating environment).
50. BOEM Alaska, Alaska OCS Region Beaufort Sea Exploration Wells (2018), https://www.boem.gov/Exploration-Wells-Beaufort-Sea/; BOEM Alaska, Alaska OCS Region Chukchi Sea Exploration Wells (2016), https://www.boem.gov/Exploration-Wells-Chukchi-Sea/.
51. *See, e.g.*, Karolin Schaps, *Royal Dutch Shell Pulls Plug on Arctic Exploration*, Reuters, Sept. 28, 2015 (noting Shell spent "about $7 billion on exploration in the waters off Alaska"), https://www.reuters.com/article/us-shell-alaska/royal-dutch-shell-pulls-plug-on-arctic-exploration-idUSKCN0RS0EX20150928.
52. *See generally* DOI, *supra* note 42.

ing exploration operations in the Chukchi and Beaufort Seas[53]—but there is no statutory direction to consider the particular risks of operating in the difficult environments to which the industry is increasingly moving.

3. Insufficient Safeguards to Ensure Value to Taxpayers or Account for Costs Borne by the Public

OCSLA mandates that offshore oil and gas lease sales should be competitive and earn fair market value for taxpayers, but the actual lease sales have not lived up to that ideal. For instance, the practice of "areawide leasing"—where entire OCS planning areas are put up for auction all at once—has resulted in low bids with little or no competition.[54] The planning process also does not ensure consideration of option value—the potential value in not developing a resource under current circumstances.[55]

As explained above, the current statutory framework does not ensure that decisionmakers adequately account for the need to reduce greenhouse gas emissions,[56] or recognize that fossil fuels are finite and that a transition to renewable energy is needed.[57] It therefore does not account for the costs of climate emissions.

OCSLA similarly fails to ensure that companies pay for other impacts that their activities cause. In addition to greenhouse gas emissions, oil and gas activities on the OCS generate significant noise, water, and air pollution. Air pollution caused by offshore oil and gas activities includes greenhouse gas emissions, both from the emissions generated by offshore operations themselves and from emissions associated with the combustion of oil and gas that is extracted from the OCS.[58] OCSLA does not ensure that companies pay the full cost of these impacts.

4. Lack of Commitment to Science, Stewardship, and Indigenous Knowledge

OCSLA calls for "expeditious and orderly development" of OCS energy resources "subject to environmental safeguards."[59] The balance between development and environmental concerns, however, "depends largely on the politics of the moment," and the Secretary of the Interior can choose how much weight to assign to environmental protection.[60] The statutory scheme does not "come close to *ensuring* a reasonable level of overall environmental protection applicable to all aspects" of OCS oil and gas activity.[61] In fact, some aspects of OCSLA actually "stack the deck *against* full consideration of environmental concerns."[62]

As with environmental stewardship, OCSLA does not sufficiently prioritize science-based decisionmaking, including the incorporation of traditional and local knowledge into the decisionmaking process. OCSLA does not require any threshold level of baseline scientific information prior to opening an area of the OCS to oil and gas leasing, nor does it specifically require managers to seek out and use local and traditional knowledge in OCS decisionmaking.

5. Failure to Provide Clarity or Prevent Politicization

The existing legal regime governing OCS oil and gas activities includes ambiguities that have led, and will likely continue to lead, to litigation. Requirements for the five-year program are notably vague, which has led to a number of legal challenges to five-year programs.[63] In fact, the statute's lack of clarity has contributed to litigation at all stages of the OCSLA process.[64] Statutory ambiguities have also led to litigation regarding federal regulators' discretion to disapprove inadequate spill response plans.[65]

In addition, the current legal framework has allowed offshore oil and gas practices to be overwhelmed by political considerations. Offshore drilling was a significant issue in the 2008 presidential campaign, during which "drill, baby, drill" was a prominent slogan.[66] At the end of the Obama Administration, a five-year program was completed; it included sales only in the western and central

53. *See* Oil and Gas and Sulfur Operations on the Outer Continental Shelf—Requirements for Exploratory Drilling on the Arctic Outer Continental Shelf; Final Rule, 81 Fed. Reg. 46478 (July 15, 2016).
54. Jayni Foley Hein, *Federal Lands and Fossil Fuels: Maximizing Social Welfare in Federal Energy Leasing*, 42 Harv. Envtl. L. Rev. 1, 13-14 (2018); *see infra* Section III.B.3. (discussing areawide leasing in detail).
55. *Id.* at 33-34.
56. *See*, *e.g.*, Michael Burger, *A Carbon Fee as Mitigation for Fossil Fuel Extraction on Federal Lands*, 42 Colum. J. Envtl. L. 295, 297 (2017) (noting "federal fossil fuel leasing programs have not adequately addressed the upstream and downstream impacts of federal leases" including impacts related to climate change).
57. *See Final Report of the President's National Commission on the BP* Deepwater Horizon *Oil Spill and Offshore Drilling: Oversight Hearing Before the House Committee on Natural Resources*, 112th Cong. 23 (2011) (joint statement of the Hon. Bob Graham and the Hon. William Reilly, Co-Chairmen, National Commission on the BP *Deepwater Horizon* Oil Spill and Offshore Drilling) (noting that the United States must move away from offshore oil drilling and "must begin a transition to a cleaner, more energy-efficient future"), *available at* https://www.govinfo.gov/content/pkg/CHRG-112hhrg63876/pdf/CHRG-112hhrg63876.pdf.
58. 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*, Center for Am. 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/.
59. 43 U.S.C. §1332(3).
60. National Commission, *supra* note 3, at 80.
61. *Id.* at 81.
62. *Id.* at 80.
63. *See* LeVine et al., *supra* note 21, at 1315-25 (describing various legal challenges to OCS planning, leasing, and other activities).
64. *Id.*; *see also* Center for Biological Diversity v. Zinke, No. 3:18-cv-00064 (D. Alaska filed Mar. 8, 2018) (challenging approval of development plan in the Beaufort Sea), https://www.biologicaldiversity.org/programs/public_lands/energy/dirty_energy_development/oil_and_gas/gulf_oil_spill/pdfs/Petition-for-Review.pdf.
65. *See*, *e.g.*, Alaska Wilderness League v. Jewell, 788 F.3d 1212, 45 ELR 20112 (9th Cir. 2015), *petition for rehearing and rehearing en banc denied*, 811 F.3d 1111 (9th Cir. 2015).
66. *See* Robert Hahn & Peter Passell, *Save the Environment: Drill, Baby, Drill*, N.Y. Times, Sept. 14, 2008 (noting chants of "drill, baby, drill" at Republican National Convention in 2008). *See also* LeVine et al., *supra* note 21, at 1304-05 (describing politicization of offshore drilling).

Gulf of Mexico and Cook Inlet in Alaska.[67] Before leaving office, President Obama used his authority under §12(a) of OCSLA to withdraw from leasing, for an indefinite period of time, roughly 115 million acres in the Arctic Ocean[68] and 3.8 million acres off the Atlantic Coast.[69]

When President Trump took office, the pendulum swung back. President Trump issued Executive Order No. 13795, which, among other things, purported to rescind President Obama's withdrawals and declared it U.S. policy to "encourage energy exploration and production, including on the Outer Continental Shelf."[70] Later, the Trump Administration released its DPP, which proposed to open virtually the entire U.S. coastline to offshore leasing,[71] despite local opposition and despite the fact that the program itself acknowledged many areas had virtually no oil and gas potential.[72] In short, offshore oil and gas has become a politically charged issue, and the existing legal framework has enabled an erratic pattern of decisionmaking instead of fostering a consistent, sound, long-term policy.

C. Agency Regulations Do Not Address Many of These Shortcomings

Deficiencies or ambiguities in statutory text can often be remedied by more specific direction in implementing regulations. However, the existing regulations implementing the first three phases of OCSLA are themselves outdated and do not fill the statutory gaps. Even where regulations have been updated or supplemented, they are subject to repeal by future administrations.

Regulations implementing the planning and leasing phases of OCSLA were promulgated nearly 40 years ago, do not provide significant substantive direction, and have not changed in any substantive manner to keep pace with changes in the industry.[73] The regulations governing exploration operations likewise do not provide sufficient direction.

There has been incremental progress related to operations in recent years. In the wake of the *Deepwater Horizon* disaster, DOI took steps intended to improve oversight and governance. Some of these changes are discussed in Part III.[74] During this time, industry also made progress toward improving safety and preparedness.[75] These steps reflect advances but not the fundamental changes needed to keep up with the needs identified above, and all are subject to change with each new administration.

D. Attempts to Change the Law

As the foregoing subsections show, there are many reasons to improve the statutory regime that governs OCS oil and gas activities. Lawmakers have proposed changes to OCSLA and related laws in the past, and continue to do so in the 116th Congress. The most sweeping of these legislative proposals came in the aftermath of the *Deepwater Horizon* disaster, when Congress considered the Consolidated Land, Energy, and Aquatic Resources Act of 2010 (CLEAR Act) and companion legislation in the U.S. Senate.[76] These bills would have made substantial and systemic changes to the management of oil and gas activities on the OCS—but were not enacted. Since the 111th Congress, proposals like this one and more targeted bills have been introduced, but Congress has not enacted any of them.

1. CLEAR Act and Companion Legislation

After the *Deepwater Horizon* disaster, lawmakers developed and debated significant changes to the governance of OCS oil and gas operations. In the U.S. House of Representatives, the CLEAR Act was the primary legislative vehicle for these changes. Title I of the CLEAR Act would have replaced the Minerals Management Service (MMS) with three new agencies, like the change that has been made administratively.[77] Title II would have amended OCSLA's policy statement; created new OCS leasing standards; established a funding mechanism to protect, maintain, and restore marine and coastal ecosystems; strengthened requirements related to exploration plans; required the Secretary of the Interior to consider new environmental factors

67. *See* BOEM, 2017-2022 Outer Continental Shelf Oil and Gas Leasing Proposed Final Program S4 (2016) (showing lease sales scheduled for Gulf of Mexico and potentially Cook Inlet, Alaska). The 2017-2022 OCS Oil and Gas Leasing Program was the first five-year program that did not include sales in either the Beaufort or Chukchi Sea or both.
68. Presidential Memorandum—Withdrawal of Certain Portions of the United States Arctic Outer Continental Shelf From Mineral Leasing (Dec. 20, 2016), https://obamawhitehouse.archives.gov/the-press-office/2016/12/20/presidential-memorandum-withdrawal-certain-portions-united-states-arctic. *See also* Press Release, DOI, Secretary Jewell Applauds President's Withdrawal of Atlantic and Arctic Ocean Areas From Future Oil and Gas Leasing (Dec. 20, 2016) (noting Arctic withdrawal was roughly 115 million acres in size).
69. Press Release, *supra* note 68 (noting Atlantic withdrawals covered roughly 3.8 million acres). *See also* Presidential Memorandum, *supra* note 68.
70. Implementing an America-First Offshore Energy Strategy, Exec. Order No. 13795, 82 Fed. Reg. 20815 (May 3, 2017).
71. BOEM, *supra* note 7, at 1 ("This Draft Proposed Program (DPP) would make more than 98 percent of the OCS available to consider for oil and gas leasing during the 2019-2024 period.").
72. *See*, *e.g.*, *id*. at 5-13 (noting four planning areas included in the DPP were omitted from a chart because they "contain negligible hydrocarbon resources").
73. *See generally* Michael LeVine et al., *What About BOEM? The Need to Reform the Regulations Governing Offshore Oil and Gas Planning and Leasing*, 31 Alaska L. Rev. 231 (2014); Andrew Hartsig et al., *Next Steps to Reform the Regulations Governing Offshore Oil and Gas Planning and Leasing*, 33 Alaska L. Rev. 1-30 (2016).
74. *See infra* Section III.C.4.
75. *See generally* Oil Spill Commission Action, Assessing Progress Three Years Later (2013), *available at* http://oscaction.org/wp-content/uploads/FINAL_OSCA-No2-booklet-Apr-2013_web.pdf. Among other things, former commissioners from the National Commission on the BP *Deepwater Horizon* Oil Spill and Offshore Drilling observed that operators and oil spill response organizations "significantly expanded the quality and quantity of the equipment to respond to a spill." *Id.* at 3.
76. CLEAR Act, H.R. 3534, 111th Cong. (2009-2010).
77. *Id.* §§101-103, 106, 107; *see infra* Part III.A.4. (explaining that MMS was broken apart to form BOEM, the Bureau of Safety and Environmental Enforcement (BSEE), and the Office of Natural Resources Revenue (ONRR)).

when preparing five-year leasing programs; and made other significant changes.[78]

Title V of the bill would have created restoration, research, and monitoring programs in the Gulf of Mexico region.[79] Title VI contained provisions to promote more holistic multisector planning on the OCS.[80] And Title VII would have changed laws relating to oil spill liability and response.[81] The House passed the CLEAR Act on July 30, 2010.[82]

The equivalent Senate response to the *Deepwater Horizon* disaster was S. 3663, the Clean Energy Jobs and Oil Spill Accountability Act of 2010.[83] The Senate bill contained many provisions similar to those in the CLEAR Act. Unlike the House, the Senate did not pass S. 3663. As a result, the 111th Congress failed to enact legislation that significantly reformed OCSLA and other laws governing oil and gas activities on the OCS.[84]

2. Recent Bills

Since the 111th Congress, lawmakers have continued to introduce legislation related to OCS oil and gas activities. Many of the CLEAR Act provisions were included in the Sustainable Energy Development Reform Act introduced in 2017.[85] Other bills have been designed to facilitate offshore drilling. For example, in the 113th Congress, the House passed the Offshore Energy and Jobs Act, H.R. 2231,[86] which would have expanded offshore leasing, removed safeguards designed to protect the marine environment, and privileged oil and gas operations over other ocean activities.[87] Other legislation—including a suite of bills introduced at the beginning of the 116th Congress—has attempted to prohibit leasing or drilling in certain areas of the OCS.[88] Thus far, Congress has passed none of these bills.

78. *Id.* §§203, 205, 207(d), 208, 209.
79. *Id.* §501, 502.
80. *Id.* §§601-603.
81. *See generally id.* tit. VII.
82. *See* 111 Cong. Rec. D888 (daily ed. July 30, 2010).
83. Clean Energy Jobs and Oil Spill Accountability Act of 2010, S. 3663, 111th Cong. (2010).
84. The 111th Congress did pass the RESTORE Act, which addresses marine and coastal restoration after the *Deepwater Horizon* disaster, including the allocation of civil and administrative penalties. President Obama signed it into law on July 6, 2012. The RESTORE Act established an ecosystem restoration council, allocated 80% of civil and administrative penalties from the *Deepwater Horizon* spill to a restoration fund, and identified a framework under which the funds can be used. The RESTORE Act did not alter the way the federal government manages OCS oil and gas activities. *See* RESTORE Act of 2012; Moving Ahead for Progress in the 21st Century Act division A, tit. I, subtit. F (Pub. L. No. 112-141, 126 Stat. 405 (2012)).
85. *See* H.R. 4426, 115th Cong. tit. V (introduced by Rep. Raul Grijalva (D-Ariz.) Nov. 16, 2017).
86. Offshore Energy and Jobs Act, H.R. 2231, 113th Cong. (2013).
87. *Id.*; *see also Hearing on H.R. 2231, the "Offshore Energy and Jobs Act," Before the Subcommittee on Energy and Mineral Resources of the House Committee on Natural Resources*, 113th Cong. (2013) (written testimony of Michael LeVine, Pacific Senior Counsel, Oceana).
88. *See, e.g.*, COAST Anti-Drilling Act of 2019; Coastal Economies Protection Act of 2019; California Clean Coast Act of 2019; New England Coastal Protection Act of 2019; Florida Coastal Protection Act of 2019; West Coast Ocean Protection Act of 2019; Stop Arctic Ocean Drilling Act of 2019; Defend Our Coast Act of 2019.
89. National Commission, *supra* note 3, at 251.
90. 43 U.S.C. §1332(3).
91. National Commission, *supra* note 3, at 82.

III. Recommended Statutory Changes

To identify changes needed to address the deficiencies summarized above, we have looked to a variety of sources, including proposed legislation, recommendations of the National Commission, congressional testimony, advocacy organizations, and academic analyses. The reforms outlined below would improve choices about when, where, and under what conditions to allow operations; improve response and liability; and increase stewardship.

As described above, we also believe that a fundamental change in the manner in which the United States addresses ocean governance, particularly in the face of climate change, is warranted. More targeted reforms are also required, and in this part, we organize those recommended reforms into four categories: (1) overarching objectives and policy; (2) planning and leasing; (3) operations and response; and (4) financial responsibility and funding.

A. Overarching Objectives and Policy Changes

As explained above, technological advancements have enabled the oil and gas industry to push into ever-deeper and more remote waters. Oversight has not "kept pace with rapid changes in the technology, practices, and risks associated with the different geological and ocean environments being explored and developed for oil and gas production."[89] Congress could address this issue in part by modernizing key policies and components of OCSLA and related legislation. Congress could amend the law to prioritize the maintenance of healthy, productive ocean ecosystems; require assessment of climate change; prioritize science, including indigenous knowledge and identification of important ecological areas; codify the division between management of leasing, oversight, and revenue; prohibit leasing in specific portions of the OCS; and improve environmental analyses.

1. Prioritize Maintaining Healthy, Productive Ocean Ecosystems

OCSLA states the OCS should be made available for "expeditious and orderly development, subject to environmental safeguards."[90] On its face, this directive does not necessarily privilege development over the protection of marine and coastal ecosystems. In practice, however, managers implementing OCSLA have often prioritized extraction of oil and gas resources ahead of stewardship of ocean resources.

Investigations have found that managers have discouraged staff from "reaching conclusions about potential environmental impacts" if those conclusions would make things more difficult for OCS leaseholders and cause "'unnecessary delays for operators.'"[91] Some DOI scientists

said their managers expected NEPA analyses to "always be a 'green light' to proceed" with industrial activities.[92] Some managers have also "reportedly 'changed or minimized the . . . scientists' potential environmental impact findings in [NEPA] documents to expedite'" OCS oil and gas activities.[93] A U.S. Government Accountability Office (GAO) study found allegations that agency managers suppressed or altered scientists' work on environmental issues.[94]

The foregoing examples show that federal managers at DOI have—at times, at least—placed greater emphasis on OCSLA's call for "expeditious development" than on its call to heed "environmental safeguards." Congress could address this problem by amending OCSLA's policy statement. A revised policy could make clear that protection, maintenance, and restoration of coastal and ocean ecosystems are the primary imperatives on the OCS. The policy could help ensure that leasing, exploration, development, and production of OCS oil and gas resources are considered only when those activities will not compromise the functioning of ocean and coastal ecosystems.

A revised policy statement that prioritizes protection of healthy, functioning ocean and coastal ecosystems would also better align with findings and recommendations of reports issued by prominent ocean policy commissions. For example, the Pew Ocean Commission's "fundamental conclusion" was that the United States must "ensure healthy, productive, and resilient marine ecosystems for present and future generations."[95] Likewise, some of the guiding principles recommended by the National Ocean Commission include stewardship, sustainability, and preservation of marine biodiversity.[96]

When President Obama created the National Ocean Policy in 2010, the policy called for protection, maintenance, and restoration of "the health and biological diversity of ocean, coastal, and Great Lakes ecosystems and resources."[97] President Trump's Ocean Policy, which revoked and replaced President Obama's policy, recognized the importance of "[c]lean, healthy waters."[98] Changing OCSLA's policy statement as described above would help ensure that governance of offshore oil and gas activities is consistent with these recommendations.

2. Require Assessment of Climate Change

As discussed above, there is an imperative to move away from fossil fuels and toward renewable sources of energy. In addition, and within the current statutory scheme, steps could be taken to recognize that need and to factor climate change into decisions about whether and under what conditions to allow offshore oil and gas extraction.

Within OCSLA, Congress could explicitly recognize that the United States must take steps to reduce carbon dioxide emissions and transition—quickly and completely—to renewable energy sources. To help effectuate that policy, Congress could modernize OCSLA by enacting provisions to ensure that environmental analyses properly account for the climate and ocean acidification impacts resulting directly from OCS activities, like drilling ("upstream impacts"), as well as the climate impacts associated with combustion of oil and gas that is extracted from the OCS ("downstream impacts").

For example, operations on leases sold under the 2012-2017 OCS Oil and Gas Leasing Program could generate more than 147 million tons of carbon dioxide equivalent emissions.[99] At present, the federal government does not quantify or charge lessees for costs associated with those emissions. The costs, however, can be quantified. Federal agencies use the social cost of carbon[100] to estimate the climate benefits of rulemakings.[101] Congress could amend OCSLA to require DOI to apply the social cost of carbon to OCS activities and adjust rent and royalty provisions to recoup costs associated with climate change impacts. Accounting for these costs could create a significant source of revenue that could be used to help mitigate climate impacts or hasten the transition to renewable energy sources. It would also help ensure taxpayers receive fair compensation from oil and gas companies that are profiting from public resources.

Congress should also ensure that assessment of climate impacts from OCS activities includes an evaluation of the impacts of black carbon. Black carbon is a particular concern in the Arctic because it has serious impacts on human health and because it is a potent short-term climate-forcing agent.[102] Emissions of black carbon have

92. *Id.*
93. *Id.*
94. GAO, Offshore Oil and Gas Development: Additional Guidance Would Help Strengthen the Minerals Management Service's Assessment of Environmental Impacts in the North Aleutian Basin 24 (2010) (GAO-10-276), *available at* https://www.gao.gov/new.items/d10276.pdf.
95. Pew Oceans Commission, *supra* note 9, at ix.
96. U.S. Commission on Ocean Policy, *supra* note 9, at 6.
97. Stewardship of the Ocean, Our Coasts, and the Great Lakes, Exec. Order No. 13547 of July 19, 2010, 75 Fed. Reg. 43023, 43023 (July 22, 2010), *revoked by* Ocean Policy to Advance the Economic, Security, and Environmental Interests of the United States, Exec. Order No. 13840 of June 19, 2018, 83 Fed. Reg. 29431, 29433 (June 22, 2018). The 2010 Obama National Ocean Policy also included calls for "improv[ing] the resiliency of ocean, coastal, and Great Lakes ecosystems, communities, and economies." *Id.* §2(a)(ii).
98. Ocean Policy to Advance the Economic, Security, and Environmental Interests of the United States, Exec. Order No. 13840 of June 19, 2018, 83 Fed. Reg. 29431, 29431 (June 22, 2018).
99. BOEM, DOI, Outer Continental Shelf Oil and Gas Leasing Program: 2012-2017, at 4-201 tbl. 4.4.4-2 (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.
100. *See generally* U.S. EPA, EPA Fact Sheet: Social Cost of Carbon (2016), *available at* https://www.epa.gov/sites/production/files/2016-12/documents/social_cost_of_carbon_fact_sheet.pdf.
101. *See*, *e.g.*, *id.* at 4 (providing examples of use of social cost of carbon in rulemakings). The Trump Administration has significantly revised the manner in which these calculations are made in such a way that has the effect of reducing the cost of emissions. *See*, *e.g.*, Brad Plumer, *Trump Put a Low Cost on Carbon Emissions. Here's Why It Matters.*, N.Y. Times, Aug. 23, 2018, https://www.nytimes.com/2018/08/23/climate/social-cost-carbon.html.
102. *See generally* U.S. EPA, Methane and Black Carbon Impacts on the Arctic: Communicating the Science (2016), *available at* https://

substantial, long-term implications for the region and the people who live there.

3. Prioritize Science, Including Indigenous Knowledge and Identification of Important Ecological Areas

OCSLA does not require any specific level of baseline scientific information before managers and decisionmakers consider opening an area of the OCS to leasing, exploration, development, or production. As a result, management decisions about OCS activities may be made in the absence of critical scientific information, rather than on the basis of that information.[103] In addition, in the event of an oil spill, the natural resource damage assessment (NRDA) process requires the effects of the spill to be measured against the baseline conditions that existed before it occurred.[104] That process is made more difficult in the absence of baseline scientific information.

Congress could amend OCSLA to ensure that OCS managers and decisionmakers have the baseline scientific information needed to make informed decisions about whether, when, where, and under what conditions OCS oil and gas activities may be permitted—and to ensure natural resource trustees have an adequate baseline in the event of an oil spill. For instance, Congress could amend OCSLA to require a threshold level of baseline scientific information—and a period of monitoring and observation—before an area is eligible to be considered for leasing.[105] Relevant scientific information could include not only physical characteristics (e.g., data on bathymetry, currents, wind, weather, sea ice, water temperatures, salinity, etc.), but ecosystem characteristics (e.g., distribution of marine species, food web characteristics, etc.).

In parallel with "western science," the agency also must consider the traditional or indigenous knowledge held by indigenous coastal residents and local knowledge held by others. Such knowledge contributes substantially to our understanding of coastal and marine ecosystems.[106] OCSLA, however, does not explicitly require mangers to seek out local, traditional, or indigenous knowledge. This gap is especially troubling in the Arctic due to the importance of ocean resources to indigenous cultures, the significance of traditional or indigenous knowledge, and the importance of engaging with Arctic communities in ways that respect their rights as knowledge-holders. Congress could revise OCSLA to require managers to seek out local, traditional, and/or indigenous knowledge, and to incorporate that knowledge into their decisionmaking process prior to making OCS areas available for leasing.

Similarly, existing law does not require decisionmakers to identify or protect areas of the OCS that have particular importance to the marine environment before making areas available for leasing. Instead, DOI's "areawide" leasing system allows for vast areas of the OCS to be made available in the absence of any detailed assessment of their ecological value. This approach may result in leasing and development in or near areas that are especially important to ecosystem functioning.

To avoid this scenario, Congress could amend OCSLA to require managers to identify and protect important marine areas before leasing decisions are made.[107] Important marine areas include, but are not limited to, essential wildlife habitat, areas that are especially productive, migratory corridors, and areas used for subsistence purposes.[108] To ensure important marine areas are not impaired by oil and gas activities, Congress could stipulate that regulatory agencies withdraw them from leasing and establish specific and stringent standards to ensure that surrounding operations do not disturb the health and functioning of important areas.

19january2017snapshot.epa.gov/sites/production/files/2016-09/documents/arctic-methane-blackcarbon_communicating-the-science.pdf.

103. *See*, *e.g.*, Native Vill. of Pt. Hope v. Salazar, 730 F. Supp. 2d 1009, 1019, 40 ELR 20220 (D. Alaska 2010) (finding that DOI had allowed leasing in the Chukchi Sea despite recognized gaps in the available scientific information that made it impossible to evaluate some of the potential impacts from leasing); Center for Biological Diversity v. U.S. Dep't of the Interior, 563 F.3d 466, 486-87 (D.C. Cir. 2009) (acknowledging that the need to gather information does not accrue at the five-year program stage). There is a particular gap in scientific information about the Arctic OCS. *See*, *e.g.*, National Commission, *supra* note 3, at 303 ("[S]cientific research on the ecosystems of the Arctic is difficult and expensive. Good information exists for only a few species, and even for those, just for certain times of the year or in certain areas."). The National Commission recommended "an immediate, comprehensive federal research effort to provide a foundation of scientific information on the Arctic (with periodic review by the National Academy of Sciences), and annual stock assessments for marine mammals, fish, and birds that use the Beaufort and Chukchi Seas." *Id.*

104. *See*, *e.g.*, 15 C.F.R. §990.52 (2010) (noting natural resource trustees "must quantify the degree, and spatial and temporal extent of such injuries relative to baseline"); *see also id.* §990.30 (defining "baseline" as "the condition of the natural resources and services that would have existed had the [oil spill] incident not occurred").

105. Such a requirement could help avoid claims that BOEM lacks sufficient baseline science at the five-year program and lease sale stages. *See*, *e.g.*, *Center for Biological Diversity*, 563 F.3d at 486-87 (denying plaintiff's claim that baseline science gaps at the lease sale stage were fatal in part because the agency recognized the gaps and claimed it would address them in later stages of the OCSLA process).

106. Joel P. Clement et al., 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 27 (2013) (observing that

> [l]ocal and traditional knowledge is considered by many to be an essential part of science-based environmental policy-making. Traditional knowledge is particularly valuable as it represents observations made repeatedly over many generations. During the current period of rapid change, the wealth of knowledge held by Alaska Natives can make key contributions to resource management and to collaborative research projects.

https://www.afsc.noaa.gov/publications/misc_pdf/iamreport.pdf. *See also* Julie Raymond-Yakoubian et al., *The Incorporation of Traditional Knowledge Into Alaska Federal Fisheries Management*, 78 Marine Policy 132-42 (2017) (defining traditional knowledge and discussing the integration of traditional knowledge in fishery management decisions).

107. *Cf.* National Commission, *supra* note 3, at 262 (recommending that, "[i]n less well-explored areas, [BOEM] should reduce the size of lease sales so their geographic scope allows for a meaningful analysis of potential environmental impacts *and identification of areas of ecological significance*." (emphasis added)).

108. Jim Ayers et al., Oceana, Important Ecological Areas in the Ocean: A Comprehensive Ecosystem Protection Approach to the Spatial Management of Marine Resources 3 (2010), *available at* https://oceana.org/reports/important-ecological-areas-ocean.

4. Codify the Division Between Management of Leasing, Oversight, and Revenue

After the *Deepwater Horizon* disaster, then-Secretary of the Interior Salazar abolished the federal agency that had been charged with managing OCS oil and gas activities and created three separate agencies to take its place. The original agency—MMS—was charged with: (1) managing revenue collection; (2) developing and implementing OCS leasing plans; and (3) overseeing offshore operations and ensuring compliance with safety laws and regulations.[109] Secretary Salazar noted that "[t]he Minerals Management Service has three distinct and conflicting missions that—for the benefit of effective enforcement energy development, and revenue collection—must be divided."[110]

The new three-agency system attempted to eliminate these conflicts. The Office of Natural Resources Revenue (ONRR) manages revenue from offshore leases. The Bureau of Ocean Energy Management (BOEM) carries out planning, leasing environmental studies, NEPA analysis, resource evaluation, and other related functions. The Bureau of Safety and Environmental Enforcement (BSEE) enforces safety and environmental regulations. This separation helps ensure that each agency can focus on its particular mission. In other words, there is less chance that BSEE staff will compromise safety and enforcement obligations if the same agency is not also responsible for revenue generation and collection.

At present, ONRR, BOEM, and BSEE are creations of the Secretary of the Interior, not Congress.[111] Just as Secretary Salazar created the agencies, a future Secretary of the Interior could abolish them or reorganize them in a different way.[112] In fact, reports suggest the Trump Administration has considered recombining BOEM and BSEE, recognizing that such a move may be perceived as a rollback of "post-*Deepwater Horizon* safety reforms."[113]

To avoid future reshuffling of agency responsibilities and—more importantly—to prevent the sort of "mission conflict" that plagued MMS, Congress could codify the existing agencies and their responsibilities by creating an organic act for the three bureaus.[114] In doing so, Congress would reassert its authority to establish and organize government entities[115] and remove the Secretary of the Interior's ability to reorganize the agencies without congressional approval.

5. Prohibit Leasing in Specific Portions of the OCS

As noted above, the Trump Administration has proposed making virtually the entire OCS available to leasing, including areas where offshore leasing is deeply unpopular with adjacent coastal communities and areas in which drilling is likely to conflict with other ocean uses, such as tourism or commercial fishing.[116] In addition, the Administration included areas of the OCS that—according to the analysis in the DPP itself—have little or no economically recoverable oil and gas, even under a favorable, high-oil-price scenario.[117] Some of the areas proposed for leasing had so few oil and gas resources that they were excluded from a table showing the "undiscovered economically recoverable resource" of OCS planning areas because they had "negligible hydrocarbon resources."[118]

The opposition by local coastal communities, demonstration that there are areas in which there are few hydrocarbon resources, and potential conflict with other activities makes it clear that there are compelling reasons to exclude certain areas from leasing. Congress could reduce conflict and help protect important ocean areas by amend-

109. Henry B. Hogue, Congressional Research Service, Reorganization of the Minerals Management Service in the Aftermath of the Deepwater Horizon Oil Spill 2 (2010), *available at* https://fas.org/sgp/crs/misc/R41485.pdf.

110. Press Release, DOI, Secretary Salazar Divides MMS's Three Conflicting Missions (May 19, 2010), https://www.doi.gov/news/pressreleases/Salazar-Divides-MMSs-Three-Conflicting-Missions. The National Commission reinforced this statement, finding that former MMS directors admitted that royalty issues took up most of their time—"at the expense of offshore regulatory oversight." National Commission, *supra* note 3, at 76.

111. Hogue, *supra* note 109, at 16.

112. *Id.* (noting that in the absence of congressional action, Secretaries of the Interior retain the ability to reorganize the former MMS' functions "in accordance with their policy preferences and priorities").

113. Adam Federman, *How Far Will the Trump Administration Go to Loosen Offshore Drilling Rules?*, The Nation, Sept. 12, 2018, https://www.thenation.com/article/how-far-will-the-trump-administration-go-to-loosen-offshore-drilling-rules/.

114. Hogue, *supra* note 109, at 16, 21-22.

115. *Id.* at 16 (noting that "[c]onstitutionally, the establishment and organization of governmental entities is the province of Congress.").

116. After meeting with Florida's governor, Secretary of the Interior Ryan Zinke announced via Twitter that he would remove Florida from the 2019-2024 OCS Leasing Program due to Florida's economic reliance on tourism. Secretary of the Interior Ryan Zinke (@SecretaryZinke), Twitter (Jan. 9, 2018, 2:20 p.m.) ("After talking with @FLGovScott, I am removing #Florida from the draft offshore plan."). Shortly after Secretary Zinke's Florida tweet, 22 U.S. senators signed a letter to Secretary Zinke, requesting that he also remove areas adjacent to their states. *See* Umair Irfan, *Florida Got an Exemption to the Offshore Drilling Plan. Now 12 Other States Want One Too.*, Vox, Jan. 12, 2018, https://www.vox.com/energy-and-environment/2018/1/10/16870450/ocs-offshore-drilling-oil-gas-lease-zinke-florida.

In Alaska, local tribes and northern Bering Sea communities requested that planning areas in the Bering Sea be excluded from the 2019-2024 OCS Leasing Program. *See*, *e.g.*, Letter from Melanie Bahnke, Kawerak, Inc., to Kelly Hammerle, Department of the Interior (Jan. 5, 2018) (requesting that BOEM exclude the Norton Sound, St. Matthew-Hall, Navarin Basin, and Hope Basin Planning Areas from the 2019-2024 Five-Year Program); Letter from Vivian Korthuis, Association of Village Council Presidents, to Renee Orr, Department of the Interior (Feb. 26, 2018) (making the same request); Letter from Harry Lincoln, Bering Sea Elders Group, to Kelly Hammerle, Department of the Interior (Mar. 9, 2018) (making the same request). Similarly, Alaska's congressional delegation and governor requested DOI drop from consideration 11 of the Alaska Region's OCS planning areas. Letter from Senator Murkowski, Senator Sullivan, and Representative Young to Secretary of the Interior Zinke (Jan. 26, 2018) (requesting removal of Hope Basin, Norton Basin, St. Matthew-Hall, Navarin Basin, Aleutian Basin, Bowers Basin, Aleutian Arc, St. George Basin, Shumagin, Kodiak, and Gulf of Alaska Planning Areas from the 2019-2024 OCS Leasing Program); Letter from Bill Walker, Governor of Alaska to Kelly Hammerle, Department of the Interior (Mar. 9, 2018); *see also* Letter from Dan Hull, North Pacific Fishery Management Council, to Kelly Hammerle, Department of the Interior (Mar. 5, 2018) (making the same request).

117. BOEM, *supra* note 7, at 5-3 tbl. 5.1 (listing 11 OCS planning areas as having less than one billion barrels of oil equivalent under the most favorable economic scenario, and noting that four other OCS planning areas were not listed in the table because they contain "negligible hydrocarbon resources").

118. *Id.*

ing OCSLA to prohibit leasing in certain areas—either indefinitely or for a set period of time. Taking some OCS planning areas off the table could reduce the geographic scope of environmental review documents at the planning and leasing stage, which could result in more meaningful environmental analyses.[119] In addition, it could result in more focused, targeted public comment.

This idea is not novel. For the better part of two decades, Congress included provisions in appropriations bills that prevented leasing in broad swaths of the OCS.[120] These provisions were eventually allowed to lapse. However, as noted above, lawmakers have recently introduced bills that would prohibit leasing in various parts of the OCS, including the Atlantic, Pacific, eastern Gulf of Mexico, and Arctic.[121] These types of prohibitions could be incorporated into a broader OCSLA reform bill.

6. Improve Environmental Analyses

The *Deepwater Horizon* disaster revealed significant issues with DOI's analyses of the potential environmental impacts of OCS oil and gas activities. Among other problems, DOI used tiering and categorical exclusions inappropriately and "fail[ed] to develop formal NEPA guidance."[122] Congress could take steps to foster improved NEPA analyses and ensure potential environmental impacts are appropriately evaluated and considered.

Initially, Congress could enact reforms designed to improve DOI's NEPA analyses, including requiring DOI to implement NEPA guidance. This step was recommended by the National Commission and GAO.[123] Congress could further direct that such guidance meet existing NEPA obligations by requiring preparation of full environmental impact statements (EIS) for five-year programs, lease sales, and exploration activities in frontier areas.

Congress could also require DOI to consider specific alternatives in five-year program EIS, such as conservation alternatives or renewable energy alternatives. At the lease sale stage, the agency could be required to undertake site-specific analyses, recognizing that individual sites within a broad lease sale area may have different characteristics, such as water depth, distance from shore, location relative to currents, location relative to marine mammal migration routes, location relative to subsistence uses, or other factors.[124] At the exploration stage, Congress could amend OCSLA to require preparation of an EIS for projects proposed in areas not subject to active exploration or development and areas in which exploration and development would require new or unconventional techniques or technologies. To ensure rigorous consideration of every exploration plan, Congress could prohibit use of "categorical exclusions" at the exploration plan stage.

Congress should also ensure that DOI considers a worst-case oil spill, even if probability of such a disaster is low.[125] Before the *Deepwater Horizon*, federal regulators generally did not analyze low-probability, high-risk events. For example, environmental assessments for proposed exploration activities in the Beaufort and Chukchi Seas explained that an extremely large spill from a blowout was "not a reasonably foreseeable event" and therefore was not analyzed as part of the assessment's "worst-case scenario."[126] The environmental assessments instead reviewed the potential effects of a small, 48-barrel fuel transfer spill.[127]

After the *Deepwater Horizon* disaster, DOI started to analyze the impacts of a "very large oil spill" in at least some of its NEPA documents. For example, in 2011, DOI released a supplemental EIS for Chukchi Sea Lease Sale 193 that included a "very large oil spill" analysis.[128] Similarly, in a 2010 review, the Council on Environmental Quality asserted that, in light of the *Deepwater Horizon* disaster, DOI would "take steps to incorporate catastrophic risk analysis" when assessing operations on the OCS.[129] Even if regulators now agree that these analyses are required under current law, Congress can ensure that DOI continues to do so by explicitly requiring the agency to consider these impacts at all stages of the OCSLA process.

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119. *Cf.* National Commission, *supra* note 3, at 261 (noting that OCS lease sales covering large geographic areas make it difficult to conduct meaningful NEPA analysis).

120. Curry L. Hagerty, Congressional Research Service, Outer Continental Shelf Moratoria on Oil and Gas Development 5 (2011) (listing congressional OCS moratoria enacted via DOI appropriations from 1982 to 1996), *available at* https://fas.org/sgp/crs/misc/R41132.pdf.

121. *See*, *e.g.*, COAST Anti-Drilling Act of 2019; Coastal Economies Protection Act of 2019; California Clean Coast Act of 2019; New England Coastal Protection Act of 2019; Florida Coastal Protection Act of 2019; West Coast Ocean Protection Act of 2019; Stop Arctic Ocean Drilling Act of 2019; Defend Our Coast Act of 2019.

122. National Commission, *supra* note 3, at 260-61.

123. *See id.* at 261; GAO, *supra* note 94, at 21.

124. As discussed *infra* Section III.B.3., the elimination of areawide leasing would help these analyses.

125. *See*, *e.g.*, 40 C.F.R. §1502.22(b)(1) (noting that in a NEPA analysis when information is missing or unavailable, "reasonably foreseeable" impacts include "impacts which have catastrophic consequences, even if their probability of occurrence is low, provided that the analysis of the impacts is supported by credible scientific evidence, is not based on pure conjecture, and is within the rule of reason").

126. MMS, Environmental Assessment: Shell Offshore Inc. 2010 Outer Continental Shelf Lease Exploration Plan for Camden Bay, Alaska, Beaufort Sea Leases A-2 (2009); MMS, Environmental Assessment: Shell Gulf of Mexico, Inc. 2010 Exploration Drilling Program, Burger, Crackerjack, and SW Shoebill Prospects Chukchi Sea Outer Continental Shelf A-2 (2009) [hereinafter MMS Chukchi Sea OCS].

127. *See*, *e.g.*, MMS Chukchi Sea OCS, *supra* note 126, at 31-32. Based on tiering to a broad-scale EIS at the lease-sale stage, this approach was validated by the U.S. Court of Appeals for the Ninth Circuit in an earlier challenge to an exploration plan. *See* Alaska Wilderness League v. Kempthorne, 548 F.3d 815, 832-33 (9th Cir. 2008), *superseded by* Alaska Wilderness League v. Salazar, 571 F.3d 859 (9th Cir. 2009).

128. BOEM, Final Supplemental Environmental Impact Statement, Oil and Gas Lease Sale 193, Chukchi Sea Planning Area app. D (2011), https://www.boem.gov/uploadedFiles/BOEM/About_BOEM/BOEM_Regions/Alaska_Region/Environment/Environmental_Analysis/2011-041v1.pdf.

129. Council on Environmental Quality, *supra* note 42, at 27. The National Commission also recommended that DOI "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." National Commission, *supra* note 3, at 267.

B. Modernize Planning and Leasing

The first steps of the OCSLA process are the broadest: DOI sets the stage by determining where and when offshore leasing will take place. These steps have been subject to significant litigation and controversy, including legal challenges to many five-year programs and some individual lease sales.[130] The Trump Administration's decision to begin a new five-year planning process several years ahead of schedule has added another layer of controversy to the process.

The underpinning of this litigation and controversy is broadly stated statutory direction that has not been clarified in any meaningful way by implementing regulations.[131] Changes to OCSLA §§18 and 9 would help ensure that planning and leasing processes align with current policies, more effectively incorporate relevant information, and provide greater certainty.

1. Section 18 Factors

OCSLA §18(a) directs the Secretary of the Interior to prepare a five-year leasing program that "consist[s] of a schedule of proposed lease sales indicating, as precisely as possible, the size, timing, and location of leasing activity which he determines will best meet national energy needs for the five-year period following its approval or reapproval."[132] It then requires the Secretary to abide by a series of overlapping principles. The program must be "conducted in a manner which considers economic, social, and environmental values of the renewable and nonrenewable resources contained in the [OCS], and the potential impact of oil and gas exploration on other resource values of the [OCS] and the marine, coastal, and human environments."[133] It also must "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."[134] And the "[t]iming and location of exploration, development, and production of oil and gas" allowed pursuant to the program must be based on a consideration of eight more specific factors.[135]

Neither the statute nor implementing regulations explain how managers are to interpret or implement these directives. Since the first five-year program was prepared in 1980, DOI has generally sought to meet these obligations using a cost-benefit analysis. The use of this approach was upheld by the U.S. Court of Appeals for the District of Columbia (D.C.) Circuit,[136] and arguably some form of cost-benefit analysis is required.[137] The cost-benefit methodology has not been codified in statute or regulation, and there has been significant controversy and litigation over the manner in which DOI has considered the various §18 factors.[138] Congress could modify the statute to clarify the overlapping factors and direct DOI to implement regulations governing the cost-benefit calculations.

In revisiting the factors, Congress could also update the statutory language to reflect the growing recognition that the health of marine ecosystems and other environmental factors should be given priority.[139] It could also mandate the consideration of option value,[140] and require explicit consideration of the particular risks inherent in operating in ultra-deepwater or frontier areas, like the Arctic Ocean.

2. Five-Year Program Stages

DOI prepares the five-year program in a series of steps. It begins with a request for information, proceeds to a draft proposed program, a proposed program, then a proposed final program.[141] The proposed final program is subject to a 60-day waiting period for review by Congress before it can be finalized. The agency prepares a programmatic EIS concurrently with the preparation of the five-year program.[142] DOI has interpreted the process as one of winnowing: areas included in early stages may be excluded in

130. *See, e.g.*, LeVine et al., *supra* note 21, at 1315-25 (describing various legal challenges to OCS planning, leasing, and other activities).
131. *See generally* LeVine et al., *supra* note 73; Hartsig et al., *supra* note 73.
132. 43 U.S.C. §1344(a).
133. *Id.* §1344(a)(1).
134. *Id.* §1344(a)(3).
135. These factors are:
> (A) existing information concerning the geographical, geological, and ecological characteristics of such regions;
> (B) an equitable sharing of developmental benefits and environmental risks among the various regions;
> (C) the location of such regions with respect to, and the relative needs of, regional and national energy markets;
> (D) the location of such regions with respect to other uses of the sea and seabed, including fisheries, navigation, existing or proposed sealanes, potential sites of deepwater ports, and other anticipated uses of the resources and space of the outer Continental Shelf;
> (E) the interest of potential oil and gas producers in the development of oil and gas resources as indicated by exploration or nomination;
> (F) laws, goals, and policies of affected States which have been specifically identified by the Governors of such States as relevant matters for the Secretary's consideration;
> (G) the relative environmental sensitivity and marine productivity of different areas of the outer Continental Shelf; and
> (H) relevant environmental and predictive information for different areas of the outer Continental Shelf.

Id. §1344(a)(2).
136. California v. Watt, 668 F.2d 1290, 1317-18, 12 ELR 20001 (D.C. Cir. 1981) (finding it "reasonable to conclude that within the section's proper balance there is some notion of 'costs' and 'benefits'").
137. *See* Hartsig et al., *supra* note 73, at 19 (discussing use of cost-benefit analysis).
138. *See, e.g.*, *Watt*, 668 F.2d at 1315-18 (discussing balancing of §18 factors); California v. Watt, 712 F.2d 584, 597-601, 13 ELR 20723 (D.C. Cir. 1983) (discussing balancing and cost-benefit analyses).
139. *See supra* Section III.A.1. (discussing revision of OCSLA's policy statement).
140. *See, e.g.*, Hein, *supra* note 54, at 33-34.
141. *See* BOEM, OCS Oil and Gas Leasing, Exploration, and Development Process, https://www.boem.gov/BOEM-OCS-Oil-Gas-Leasing-Process/.
142. *Id.*; *see also* Adam Vann, Congressional Research Service, Offshore Oil and Gas Development: Legal Framework 7-8 (2018) ("The development of the five-year program is considered a major federal action significantly affecting the quality of the human environment and as such requires preparation of an environmental impact statement (EIS) under the National Environmental Policy Act (NEPA)."), *available at* https://fas.org/sgp/crs/misc/RL33404.pdf.

later stages, but, once excluded, a planning area may not be added back at a later stage.[143]

Neither statute nor regulation describes the steps required to develop a five-year program or the "winnowing" nature of the process. Lawmakers can provide additional certainty and make the five-year program process more transparent to the public by codifying both the requisite steps and the winnowing process.

3. Areawide Leasing

Prior to 1982, DOI conducted offshore leasing using a "tract nomination" system. DOI issued a call for nominations, requesting that oil companies identify promising tracts within an OCS region. After evaluating these nominations, DOI would decide which tracts to offer on the basis of "the past leasing history of the area, economic and environmental considerations, multiple-use conflicts, and the estimated potential of the sale area."[144]

Industry pushed to change this system in the late 1970s and early 1980s.[145] This push coincided with the appointment of James Watt as President Ronald Reagan's Secretary of the Interior. Secretary Watt heeded industry's call and committed to making one billion acres of offshore area available to companies in the 1982-1987 Five-Year Leasing Program.[146] To meet this promise, Secretary Watt replaced the tract nomination process with an "areawide" leasing process. Under the areawide system, all the lease tracts in entire planning areas—which can be tens of millions of acres in size—were offered for lease at one time.[147]

Areawide leasing was controversial when first implemented,[148] but it became DOI's default method of selling leases. While there may have been reasons for changing the system in the early 1980s,[149] there is now good cause to retreat from areawide leasing. Areawide leasing can have the effect of reducing competition and, therefore, revenue to the U.S. Treasury.[150] In BOEM's August 2017 OCS lease sales, for example, 90% of the tracts that were sold received only one bid (i.e., there was no evidence of competitive bidding). Over the past 20 years, of all the Gulf of Mexico OCS leases that received bids, more than 75% received only one bid.

Areawide leasing also makes meaningful environmental analysis difficult.[151] Ultimately, areawide leasing can be seen as a political tool that allows DOI to claim that it is making available for lease hundreds of millions of OCS acres—even though there is no possibility that companies will bid on most of them.[152]

In the Arctic planning areas, DOI has already recognized that a more targeted approach is warranted. In the 2012-2017 Five-Year Program, the agency excluded a series of sensitive areas from leasing under that program. In so doing, it noted "[m]ore focused leasing is geographically targeted in scope and could be used in any OCS region to achieve an appropriate balance between making resources available and limiting conflicts . . . by making certain determinations from the outset about which blocks within the planning area are most suitable for leasing."[153]

For some areas of the OCS, it may not be necessary to revert fully to the tract nomination process. There must, however, be a compromise system in which DOI makes available only those areas in which there is some industry interest and where it can be shown that industry can operate safely. There is good reason to explore these possibilities in frontier areas, like the Arctic, if leasing takes place there in the future. Congress could direct changes to the leasing process either as part of the development of the five-year program in §18 or as part of the management of lease sales in §9.

4. Update Regulations

Regulations implementing the five-year program and leasing sections of OCSLA are outdated and insufficient. As we have covered in detail elsewhere, these regulations were promulgated in the early 1980s and have not changed substantively in the nearly 40 years since.[154] As a result, they have not kept up with changes in the industry, science, or policy. Moreover, some regulations—such as those implementing the five-year program—simply restate the statutory text, providing no additional or useful guidance to the agency. As part of updating OCSLA, lawmakers could direct the agency to promulgate new, updated regulations that could offer more utility to the agency.

143. *See*, *e.g.*, BOEM, *2017-2022 Proposed Final Program Frequently Asked Questions—General* ("The Department of the Interior cannot offer an area for lease or add an additional lease sale within an area without it being included in an approved Five-Year Program. However, the geographic scope of a lease sale area can be narrowed and a lease sale can be cancelled during the implementation of a Five-Year Program."), https://www.boem.gov/2017-2022-Proposed-Final-Program-FAQs/ (last visited Mar. 22, 2019).

144. Juan Carlos Boué & Gerardo Luyando, Oxford Institute for Energy Studies, U.S. Gulf Offshore Oil: Petroleum Leasing and Taxation and Their Impact on Industry Structure, Competition, Production, and Fiscal Revenues 39 (2002) (citations omitted).

145. *See*, *e.g.*, Tyler Priest, Extraction Not Creation: The History of Offshore Petroleum in the Gulf of Mexico 251-52 (2007), https://typriest.files.wordpress.com/2012/05/extraction-not-creation.pdf.

146. *See* LeVine et al., *supra* note 21, at 1316-17. *See also* National Commission, *supra* note 3, at 65.

147. Boué & Luyando, *supra* note 144, at 44, 47-48.

148. *Id.* at 68-79 (discussing areawide leasing).

149. *See* Priest, *supra* note 145, at 253.

150. Boué & Luyando, *supra* note 144, at 48.

151. *See* David S. Hilzenrath & Nicholas Pacifico, *Drilling Down: Big Oil's Bidding*, Project on Gov't Oversight, Feb. 22, 2018 (noting the Trump Administration acknowledged if lease sales are limited to selected tracts, the government may sell fewer leases, but it would "allow more focused environmental analyses"), https://www.pogo.org/investigation/2018/02/drilling-down-big-oils-bidding/. *See also* National Commission, *supra* note 3, at 262 ("In less well-explored areas, Interior should reduce the size of lease sales so their geographic scope allows for a meaningful analysis of potential environmental impacts and identification of areas of ecological significance.").

152. *See*, *e.g.*, BOEM, *supra* note 7, at 5-13 (noting four planning areas included in the DPP were omitted from a chart because they "contain negligible hydrocarbon resources" and showing few resources in most of the areas).

153. BOEM, 2017-2022 Outer Continental Shelf Oil and Gas Leasing Proposed Final Program 10-17 (2016), https://www.boem.gov/2017-2022-OCS-Oil-and-Gas-Leasing-PFP/.

154. *See generally* LeVine et al., *supra* note 73; Hartsig et al., *supra* note 73.

C. Operations, Preparedness, Response, and Remediation/Restoration

1. Spill Response Standards

The capacity to recover spilled oil from ocean waters is limited, even under the best conditions. As noted above, experts estimate the mechanical recovery methods used during massive response to the *Deepwater Horizon* disaster recovered only about 3% of the oil discharged from the Macondo well.[155] The National Commission found that "[t]echnology available for cleaning up oil spills has improved only incrementally since 1990," that "[f]ederal research and development programs in this area are underfunded," and that "major oil companies have committed minimal resources to in-house research and development related to spill response technology."[156]

OCS operators must prepare oil spill response documents containing "a plan for responding, to the maximum extent practicable, to a worst case discharge" and identifying and ensuring personnel and equipment "necessary to remove to the maximum extent practicable a worst case discharge" and "to mitigate or prevent a substantial threat of such a discharge."[157] These plans must comport with a series of standards set forth in the CWA.[158] To spur better on-water cleanup results and more investment in research and development for response technologies, Congress could enact stringent oil spill response standards to replace or strengthen spill response plan requirements contained in §311(j)(5) of the CWA.

Lawmakers could update these standards to require operators to show their ability to meet performance standards in the field before they are permitted to conduct drilling operations. These performance standards could require operators to demonstrate the availability of adequate equipment, trained personnel, and resources to respond effectively to a worst-case oil spill. Operators could be required to prove their ability to deploy spill response equipment in real-world conditions and to show that their equipment will meet a specific performance target. Congress could provide that these spill response standards be enforced via independent third-party review. Some of these changes were included in the CLEAR Act that passed the House in 2010.[159]

Congress could also require management agencies to consider the "response gap," the time during which spill response is altogether impossible due to poor weather or other conditions.[160] A response gap assessment analyzes historic patterns of weather data and sea states and compares them to the operating limits of spill response equipment to determine how often spill response is likely to be impaired or impossible. Congress could require a response gap analysis before authorization of any on-water operations and could establish response gap thresholds.

2. Clarify DOI's Authority to Disapprove Inadequate Spill Response Plans

In a 2015 decision upholding BSEE's approval of Shell's Arctic Ocean spill response plan, the U.S. Court of Appeals for the Ninth Circuit found that the agency's determination that a plan does or does not meet statutory requirements is purely ministerial in nature and that BSEE lacks discretion to examine the proposed plan or alternatives.[161] The court determined that BSEE could not deny approval of an oil company's spill plan so long as the company provided the documents and information required by statute.[162] BSEE was neither required nor allowed to consider alternative methods of response that might be more effective.[163] The court concluded "that BSEE '*must* approve' any conforming plan, and thus has no discretion over the adequacy of the plans."[164]

Congress could amend the law to provide BSEE with authority to consider the efficacy of proposed spill response plans, to consider alternative response plans, and to deny approval of proposed plans when more effective alternatives are available. Doing so would help ensure that operators treat spill planning as more than a box-checking exercise, which could help spur more effective, innovative spill response plans. To increase transparency and accountability, lawmakers could also provide for public review and comment on all proposed OCS spill response plans.

3. Review of Exploration Plans, Spill Response Plans, and NRDA

One of the major problems made evident by the *Deepwater Horizon* disaster was the lack of scrutiny afforded various

155. National Commission, *supra* note 3, at 168.
156. *Id.* at 269.
157. 33 U.S.C. §1321(j)(5)(A), (B), (D).
158. *Id.* §1321(j)(5)(C)(iii).
159. CLEAR Act, H.R. 3534, 111th Cong. §208(b) (2010) (requiring applicant for OCS exploration plan to demonstrate "the capability and technology to respond immediately and effectively to a worst-case oil spill in real-world conditions in the area of the proposed activity"); *id.* §212 (requiring chief executive officer of oil company to attest in writing that the company "has the capability and technology to respond immediately and effectively to a worst-case oil spill in real-world conditions in the area of the proposed activity").
160. *See generally* Nuka Research and Planning Group, LLC, Estimating an Oil Spill Response Gap for the U.S. Arctic Ocean (Revised) (2016) (providing analysis of how often specific oil spill response tactics would or would not be available under certain environmental conditions, including wind, sea state, temperature, ice cover, and visibility), https://nukaresearch.com/download/projects/estimating-an-oil-spill-response-gap-for-the-us-arctic-ocean-revised.pdf.
161. Alaska Wilderness League v. Jewell, 788 F.3d 1212, 1226, 45 ELR 20112 (9th Cir. 2015), *petition for rehearing and rehearing en banc denied*, 811 F.3d 1111 (9th Cir. 2015) (holding that BSEE "lacked discretion to deny approval once it determined that the [oil spill response plan] satisfied the statutory requirements").
162. *Id.* at 1225-26.
163. *Id.*
164. Alaska Wilderness League v. Jewell, 811 F.3d 1111, 1112 (9th Cir. 2015) (Gould, Fletcher & Callahan, JJ, dissenting from en banc order denying rehearing and rehearing en banc and characterizing the effect of the majority's decision).

plans related to drilling, response, and remediation. In one infamous example, BP's spill response plan for the Gulf of Mexico listed walrus as a sensitive species.[165] There are, of course, no walrus in the Gulf of Mexico. That error—along with others—demonstrated the lack of detailed review for those plans. Amendments to OCSLA to extend time lines and allow for public and interagency review of drilling, response, and other plans would help prevent problems like this in the future.

Review of exploration drilling plans is a useful example. Exploration plans provide information about the well or wells an operator intends to drill; they are subject to a two-step review process at DOI.[166] First, the agency reviews the plan for completeness and, once satisfied that the requisite information is included, deems the plan "submitted."[167] Once DOI deems the plan submitted, OCSLA requires that the agency approve or reject it within 30 days.[168]

This 30-day limit garnered substantial attention in the wake of the *Deepwater Horizon* disaster. President Obama identified it specifically as a problem that Congress needed to fix.[169] The National Commission also called on Congress to "amend the Outer Continental Shelf Lands Act to extend the 30-day deadline for approving exploration plans to 60 days."[170] The CLEAR Act contained a provision that would have extended the deadline.[171]

In addition to unnecessarily limiting the review of plans, the 30-day deadline has been interpreted to mean that environmental review must take place within that 30 days. DOI will not start NEPA review until after the plan has been deemed submitted, which means that it cannot prepare a full EIS. As a result, "extensive environmental review at this stage may be constrained or rely heavily upon previously prepared NEPA documents."[172]

To address this problem, Congress should remove the 30-day limit. If a longer limit remains,[173] Congress should include specific direction to the agency that an exploration plan may not be deemed "submitted" until all reviews—including the possibility of a full EIS—are complete.[174]

Congress can also ensure that exploration plans and spill response plans are subject to public and interagency review. Currently, there is no requirement for public or interagency review of either type of plan, and the lack of a full NEPA process at the exploration stage means that the public and other agencies do not have that avenue for review. This problem is particularly significant for spill response plans, which may never be subject to a public process.

The National Commission identified lack of review of spill response plans as a contributing factor in the *Deepwater Horizon* disaster, and called for a "new process for reviewing spill response plans."[175] It went on to recommend that:

> oil spill response plans, including source-control measures, should be subject to interagency review and approval by the Coast Guard, EPA, and NOAA [the National Oceanic and Atmospheric Administration]. Other parts of the federal government, such as [the U.S.] Department of Energy national laboratories that possess relevant scientific expertise, could be consulted. This would help remedy the past failure to integrate multiple area, regional, and industry response plans, by involving the agencies with primary responsibility for government spill response planning in oversight of industry planning. Plans should also be made available for a public comment period prior to final approval and response plans should be made available to the public following their approval.[176]

OCSLA does not preclude this type of comment period, and it could, therefore, be accomplished through changes in the implementing regulations.[177] Given the agency's lack of attention to this issue, however, congressional action is warranted.

A similar issue is at play in the NRDA process established by OPA 90. The NRDA process is the way in which parties responsible for spills accomplish removal and remediation. One of the steps in the process is an assessment of the natural resource damages, which include "(A) the cost of restoring, rehabilitating, replacing, or acquiring the equivalent of, the damaged natural resources; (B) the

165. *See*, *e.g.*, Holbrook Mohr et al., *BP's Gulf Oil Spill Response Plan Lists the Walrus as a Local Species. Louisiana Gov. Bobby Jindal Is Furious*, Christian Sci. Monitor, June 9, 2010, https://www.csmonitor.com/From-the-news-wires/2010/0609/BP-s-gulf-oil-spill-response-plan-lists-the-walrus-as-a-local-species.-Louisiana-Gov.-Bobby-Jindal-is-furious. Plans prepared by ExxonMobil, Chevron, and other companies for response in the Gulf included a similar statement. *See*, *e.g.*, Frank James, *Oil Execs Grilled on Copycat Emergency Plans*, Nat'l Pub. Radio, June 15, 2010, https://www.npr.org/sections/thetwo-way/2010/06/15/127863551/oil-execs-grilled-for-identical-emergency-plans-walruses-and-all.

166. *See* Hartsig, *supra* note 31, at 276-77 (detailing the requirements for an exploration plan and the steps of review).

167. 30 C.F.R. §250.231.

168. 43 U.S.C. §1340(c)(1); *see also* 30 C.F.R. §250.233.

169. Louis Jacobson, *Obama Blames 30-Day Legal Limit for Role in Oil Spill*, PolitiFact, June 1, 2010, http://www.politifact.com/truth-o-meter/statements/2010/jun/01/barack-obama/obama-blames-30-day-limit-law-role-oil-spill/.

170. National Commission, *supra* note 3, at 262.

171. CLEAR Act, H.R. 3534, 111th Cong. §208 (2010).

172. Vann, *supra* note 142, at 13.

173. The National Commission, for example, suggested that the deadline be extended to 60 days. National Commission, *supra* note 3, at 262.

174. *Id.* (stating that the agency 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").

175. *Id.* at 266-67.

176. *Id.* Other commentators have noted:

> There is heightened, broad public interest in oil spill response plans by academics, local governments, state governments, other federal agencies, and nongovernmental organizations in the Arctic. The public should have a voice in what kind of oil and gas development is appropriate, where it should take place, and what safeguards are needed.

Pew Charitable Trusts, Arctic Standards: Recommendations on Oil Spill Prevention, Response, and Safety in the U.S. Arctic Ocean 43 (2013), *available at* https://www.pewtrusts.org/-/media/assets/2013/09/23/arcticstandardsfinal.pdf.

177. *See* Pew Charitable Trusts, *supra* note 176, at 43 (recommending that DOI codify in regulation a 60-day public and joint agency review for oil spill response plans).

diminution in value of those natural resources pending restoration; plus (C) the reasonable cost of assessing those damages."[178] This assessment takes place in multiple stages: preliminary assessment; restoration planning, which is divided into "injury assessment" and "restoration selection"; and restoration implementation, in which the restoration options are carried out.[179]

OPA 90 requires public participation as restoration plans are developed. The statute does not, however, provide for public involvement in the injury assessment stage. Public review would help increase confidence that the government and responsible party are negotiating in good faith and prioritizing a thorough restoration effort. As we have argued elsewhere, under the current process the responsible party has a disincentive to undertake rigorous studies because if it finds less harm, it will have to pay less money toward restoration.[180] Similarly, the government has an incentive to agree with the responsible party in order to prevent a court fight.[181] Public review would help mitigate these problems.

4. Codify Regulatory Updates and Mandate Full Review of Existing Regulations

After the *Deepwater Horizon* disaster, DOI promulgated a variety of regulations designed to increase safety, improve the efficacy of spill response and containment, and address specialized issues related to exploratory drilling in Arctic waters.[182] These steps were important, but this progress can be—and, in fact, has been—eroded by later administrations. Congress could prevent this by codifying these regulatory changes.

The National Commission recognized that regulation of the oil and gas industry had not kept up with changes in that industry, and recommended adoption of a more sophisticated approach that requires holistic risk assessment, development of a coordinated risk management plan, and integration of subcontractors "in a safety management system."[183] It also recommended that DOI require operators to develop more detailed plans for well source control and containment.[184] In addition, the National Commission recognized the need to take a hard look at spill response and containment in the Arctic,[185] noting that "[s]uccessful oil-spill response methods from the Gulf of Mexico, or anywhere else, cannot simply be transferred to the Arctic."[186]

By the time the National Commission published its recommendations, DOI had already issued a new rule on safety and environmental management systems (SEMS).[187] In the years that followed, DOI published the Drilling Safety Rule in 2012,[188] a second SEMS Rule in 2013,[189] and a rule intended to improve spill prevention and oversight known as the "well control rule."[190] In 2016, BSEE and BOEM finalized a new safety and spill prevention rule applicable to certain exploration activities in the U.S. Arctic Ocean.[191] The new rule codified requirements like the ability to drill a same-season relief well, development of an integrated operations plan, and seasonal restrictions to account for ice cover. BOEM also used its regulatory authority to increase liability limits for offshore facilities to keep pace with inflation for the first time since such changes were mandated in OPA 90.[192]

Generally, these rulemakings were designed to improve operations, safety, and preparedness in response to lessons learned from the *Deepwater Horizon* tragedy and Shell's problems in the Arctic. They were laudable, but remain subject to modification or reversal by future administrations. In fact, the Trump Administration has already taken steps to roll back portions of the 2016 Well Control Rule[193] and has threatened to roll back Arctic-specific drilling rules.[194] To prevent an erosion of safety and spill response and containment capacity on the OCS, Congress could codify the regulatory changes that were instituted in the wake of the *Deepwater Horizon*.

In addition, Congress should direct a fundamental revision to the suite of rules governing exploration. Like regulations governing planning and leasing discussed above,[195] the regulations implementing the exploration phase of

178. 33 U.S.C. §2706(d)(1).
179. NOAA National Ocean Service, *What Is a Natural Resource Damage Assessment?*, https://oceanservice.noaa.gov/facts/nrda.html (last updated June 25, 2018).
180. Michael LeVine & Andrew Hartsig, *Management and Oversight of Offshore Oil and Gas—The Need for Change*, 42 Trends 1, 2 (2010).
181. *Id.*
182. *See supra* Section II.C.
183. National Commission, *supra* note 3, at 270, 252.
184. *Id.* at 273.
185. *Id.* at 303-04.
186. *Id.* at 303.
187. Oil and Gas and Sulphur Operations in the Outer Continental Shelf—Safety and Environmental Management Systems; Final Rule (SEMS I), 75 Fed. Reg. 63610 (Oct. 15, 2010).
188. Oil and Gas and Sulphur Operations on the Outer Continental Shelf—Increased Safety Measures for Energy Development on the Outer Continental Shelf, Final Rule, 77 Fed. Reg. 50856 (Aug. 22, 2012).
189. Oil and Gas and Sulphur Operations in the Outer Continental Shelf—Revisions to Safety and Environmental Management Systems (SEMS II), 78 Fed. Reg. 20423 (Apr. 5, 2013).
190. *See* Oil and Gas and Sulfur Operations in the Outer Continental Shelf—Blowout Preventer Systems and Well Control, Final Rule, 81 Fed. Reg. 25888 (Apr. 29, 2016).
191. *See* Oil and Gas and Sulfur Operations on the Outer Continental Shelf—Requirements for Exploratory Drilling on the Arctic Outer Continental Shelf, Final Rule, 81 Fed. Reg. 46478 (July 15, 2016).
192. *See* Consumer Price Index Adjustments of the Oil Pollution Act of 1990 Limit of Liability for Offshore Facilities, Final Rule, 79 Fed. Reg. 73832 (Dec. 12, 2014).
193. Oil and Gas and Sulfur Operations in the Outer Continental Shelf—Blowout Preventer Systems and Well Control Revisions, 83 Fed. Reg. 22128 (May 11, 2018).
194. Office of Management and Budget, *Revisions to the Requirements for Exploratory Drilling on the Arctic Outer Continental Shelf* (proposed rule stage) (proposing to revise provisions of the 2016 Arctic drilling rule), https://www.reginfo.gov/public/do/eAgendaViewRule?pubId=201710&RIN=1014-AA40 (last visited Mar. 22, 2019); *see also* Implementing an America-First Offshore Energy Strategy, Exec. Order No. 13795 of April 28, 2017, 82 Fed. Reg. 20815, 20817 (May 3, 2017) (directing the secretary of the interior to review the 2016 Arctic drilling rule and, if appropriate, initiate a rulemaking to suspend, revise, or rescind the 2016 rule).
195. *See supra* Section III.B.4.

OCSLA are outdated and in need of revision.[196] To address these issues, Congress could direct DOI to promulgate new, updated regulations.

D. Financial Responsibility and Funding

Several of the reforms proposed earlier in this Article touch on fiscal issues, including, for example, moving away from areawide leasing in order to increase revenue from sales. The subsections that follow suggest specific changes that would increase funding for preparedness, response, and remediation. Many of these updates have been proposed in earlier legislation, by the National Commission, or in other venues.

1. The OSLTF

Among other advances, OPA 90 authorized use of the OSLTF.[197] The fund is intended as a source of money to pay for activities related to assessment, removal, and remediation of marine oil spills.[198] There is no limit on the amount of revenue derived from oil spills that can be deposited into the OSLTF. However, there is a limitation on expenditures from the fund: the maximum amount that can be paid from the fund for removal activities for any single incident is limited to $1 billion, and expenditures for NRDA and claims in connection to a single incident are limited to $500 million.[199]

The fund received most of its revenue from a five-cent per barrel tax, "collected from the oil industry on petroleum produced in, or imported to, the U.S."[200] Congress eventually increased the tax to nine cents per barrel, but that increase came with a sunset provision: the per-barrel tax expired on December 31, 2018.[201] To ensure continued funding of the OSLTF, Congress should eliminate the sunset provision and restart the tax.

As it does so, Congress also could expand the allowable uses of the fund to explicitly include scientific research and monitoring conducted by NOAA. Understanding the marine environment, including disproportionately sensitive or important areas, will help prioritize response and assess damages. Garnering that understanding is consistent with the intentions of the statute and with good governance. This goal could be facilitated by amending OPA 90 to include authorization for "scientific research and monitoring dedicated to better understanding the vulnerability of marine ecosystems to, and the effects of, oil leasing, exploration, and development and ways to implement ecosystem-based management."[202] In the wake of the *Deepwater Horizon*, Sen. Maria Cantwell (D-Wash.) introduced legislation that would have directed funds to NOAA.[203]

2. Financial Responsibility

OPA 90 made clear that companies responsible for spilling oil into marine waters were also responsible for removing that oil and remediating the damage caused. The law established a system for identifying those costs and damages. The *Deepwater Horizon* disaster was the first big test of that system, and it brought to light deficiencies that Congress should address.

A responsible party is strictly liable for the "removal costs and damages" resulting from a spill.[204] "Removal costs" are those incurred in the "containment and removal of oil or a hazardous substance from water and shorelines or the taking of other actions as may be necessary to minimize or mitigate damage."[205] For offshore facilities other than deepwater ports, there is no limit on a responsible party's liability for removal costs, but there is a cap on liability for damages.[206]

The law defines "damages" expansively, to include effects on "natural resources," "real or personal property," "subsistence use," "revenues," "profits and earning capacity," and "public services."[207] For an operator of an offshore facility, the statute caps liability for all of these damages at $75 million per incident.[208] The limit does not apply only "if the incident was proximately caused by a responsible party's gross negligence, willful misconduct, or violation of applicable Federal safety, construction, or operation regulation."[209]

196. *See* Hartsig et al., *supra* note 73, at 26-27. *See supra* Section III.C.3. (discussing problems with 30-day deadline for approval of exploration plans).
197. 33 U.S.C. §2712 ("Uses of the Fund," describing presidential authority over the OSLTF, state access to the fund, etc.). The fund was created in 1986. *See* 26 U.S.C. §9509 (establishing the OSLTF).
198. 33 U.S.C. §2712; *see also* U.S. Coast Guard National Pollution Funds Center, NPFC Mission Overview 9 (describing uses of the fund), https://www.uscg.mil/Portals/0/NPFC/docs/PDFs/Reports/Mission_Overview_2008.pdf.
199. 26 U.S.C. §9509(c)(2)(A).
200. U.S. Coast Guard National Pollution Funds Center, *supra* note 198.
201. *See* 26 U.S.C. §4611(f)(2) (providing that the per-barrel tax "shall not apply after December 31, 2018").
202. *See Hearing on Amendments to the Outer Continental Shelf Lands Act Before the Senate Committee on Energy and Natural Resources*, 111th Cong. (2010) (testimony of Marilyn Heiman, Director, Offshore Energy Reform Project, Pew Environment Group), https://www.energy.senate.gov/public/index.cfm/files/serve?File_id=6A56B6BF-B868-9219-4B34-FCDC882B5EB4.
203. *See* S. 684, 111th Cong. §203 (2009), https://www.govtrack.us/congress/bills/111/s684/text.
204. 33 U.S.C. §2702(a), (b). However, responsible parties are not liable for the costs of removal or damages if violations were caused solely by an act of God, act of war, or act or omission of a third party. *Id.* §2703(a).
205. *Id.* §2701(30), (31).
206. *Id.* §2704(a)(3); *id.* §2704(c)(3):

> Notwithstanding the limitations established under subsection (a) and the defenses of section 2703 of this title, all removal costs incurred by the United States Government or any State or local official or agency in connection with a discharge or substantial threat of a discharge of oil from any Outer Continental Shelf facility or a vessel carrying oil as cargo from such a facility shall be borne by the owner or operator of such facility or vessel.

See also National Commission, *supra* note 3, at 245 (noting that liability for removal costs is unlimited, "but there is a cap on liability for damages").
207. 33 U.S.C. §2702(b)(2)(A)-(F).
208. *Id.* §2704(a)(3).
209. National Commission on the BP *Deepwater Horizon* Oil Spill and Offshore Drilling, Staff Working Paper No. 10, Liability and Compensation Requirements Under the Oil Pollution Act 3 [hereinafter National Commission Working Paper], https://cybercemetery.unt.edu/archive/oilspill/20130215212321/http://www.oilspillcommission.gov/

In addition, operators of offshore facilities are required to demonstrate to the government that they have a certain level of financial capacity to meet "removal costs and damages" for claims made pursuant to OPA 90.[210] DOI has discretion in determining the amount of financial capacity that must be demonstrated, but the statute limits it to $150 million; in other words, the most financial capacity a company may be required to demonstrate is $150 million.[211] In the event that a company cannot pay for removal or damages, the OSLTF is available for uncompensated costs. The law, however, limits the amount that may be withdrawn from the fund to $1 billion per incident.[212]

The costs of removal and damages resulting from the *Deepwater Horizon* disaster far exceeded all of the limits imposed by the statutes. Recent estimates have put the cost at $65 billion.[213] As that figure makes clear, the current system of financial liability and responsibility are inadequate. Three key changes to the law would help address the problems identified: removing the $75 million limit on liability for damages; significantly increasing the amount of financial responsibility a company must show; and removing the limit on one-time payouts from the OSLTF. As explained below, it is necessary to consider changes like these together in order to avoid unintended consequences.

- *Remove the liability cap*. The National Commission recommended eliminating or raising the liability cap; its working papers noted that the cap "provides little incentive for improving safety practices to decrease the likelihood of major spills, and it limits the ability of those of who suffer damages to receive full compensation."[214] The liability cap issue continues to be part of the debate about offshore drilling, and bills have been introduced as recently as 2018 to remove the cap.[215]

  It is clear a $75 million cap is inadequate and should be eliminated or, at a minimum, raised substantially. Care is required because eliminating the cap all at once has the potential to adversely affect certain small or independent operators.[216]

- *Increase the demonstrated financial responsibility*. In addition to raising the liability cap, "[f]inancial responsibility limits should also be increased, because if an oil company does not have adequate resources to pay for a spill, the application of increased liability has little effect: Should a company go bankrupt before fully compensating for a spill, its liability is effectively capped."[217] Indeed,

  > the fact that BP is able to provide full monetary compensation for damages that it causes is no more than a fortuity, not a product of regulatory design. If a company with less financial means had caused the spill, the company would likely have declared bankruptcy long before paying anything close to the damages caused.[218]

  In other words, it "is critical that compensation to victims be paid in full," and that rules are in place to ensure that is possible.[219]

  In the aftermath of the *Deepwater Horizon* disaster, BP worked with the federal government to create a $20 billion fund intended to provide compensation to victims.[220] The fund was an invention intended, at least in part, to provide certainty to victims, the federal government, and the company itself—which was at very real risk of bankruptcy.[221] Creation of the fund was necessary, in part, because the law failed to set forth adequate requirements to demonstrate financial capacity or surety.

  Companies should be required to demonstrate much more significant financial capacity. How much and how to demonstrate that capacity are significantly more difficult questions. Many companies currently self-insure,[222] and it may not be possible to acquire sufficient insurance at all. In 2010, it was estimated that "global insurance capacity available to meet the Oil Spill Financial Responsibility requirements of the 1990 Oil Pollution Act is approximately $1.5 billion."[223] It may also be possible to show the required capacity through a surety or other bond. Aside from the specific mechanism, it is clear that the current requirement to demonstrate a maximum of $150 million of capacity to respond to a spill is at least two orders of magnitude smaller than the potential liability and should be changed.

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sites/default/files/documents/Liability%20and%20Compensation%20Under%20the%20Oil%20Pollution%20Act.pdf. *See also* 33 U.S.C. §2704(c)(1).

210. 33 U.S.C. §2716(c), (f); *see also* 30 C.F.R. pt. 253 (establishing regulations for oil spill financial responsibility for offshore facilities).

211. 33 U.S.C. §2716(c)(1)(C). "Firms may demonstrate financial responsibility in various ways, including surety bonds, guarantees, letters of credit, and self-insurance; the most common method is through an insurance certificate." National Commission Working Paper, *supra* note 209, at 2.

212. 26 U.S.C. §9509(c)(2).

213. *See* Bousso, *supra* note 43. Some experts estimate the cost of the spill was much higher. *See*, *e.g.*, Lee et al., *supra* note 43, at 78-79 (concluding ultimate cost to BP was nearly $145 billion).

214. National Commission, *supra* note 3, at 245-46; National Commission Working Paper, *supra* note 209, at 1.

215. *See* Big Oil Bailout Prevention Unlimited Liability Act of 2018, S. 3757, 115th Cong. (2018).

216. National Commission, *supra* note 3, at 246.

217. *Id*. at 284.

218. National Commission Working Paper, *supra* note 209, at 1.

219. National Commission, *supra* note 3, at 283.

220. *See* Jonathan Weisman & Guy Chazan, *BP Agrees to $20 Billion Fund*, Wall St. J., June 17, 2010 (describing how BP agreed to put $20 billion into a fund to compensate victims of the Gulf oil spill), https://www.wsj.com/articles/SB10001424052748704198004575310571698602094.

221. Nin-Hai Tseng, *BP After the Spill: Bankrupt, Bought, or Business as Usual?*, Fortune, June 7, 2010 (describing a post-*Deepwater Horizon* BP bankruptcy as a "plausible" scenario), http://archive.fortune.com/2010/06/04/news/companies/gulf_coast_BP_bankruptcy_odds.fortune/index.htm.

222. *See*, *e.g.*, Louise Rouse et al., Greenpeace UK et al., Frozen Future: Shell's Ongoing Gamble in the US Arctic 2 (2014) (noting that Shell self-insured for operations in the U.S. Arctic Ocean).

223. Booz Allen Hamilton, The Offshore Oil and Gas Industry Report in Insurance—Part One 5 (2010), https://cybercemetery.unt.edu/archive/oilspill/20130216041039/http://www.oilspillcommission.gov/sites/default/files/documents/Insurance_Report_Part%20One_Oct_5_4%20PM_r1.pdf.

- *Eliminate the limit on per-incident payouts from the OSLTF*. The OSLTF is currently the backstop for compensation of damages for which companies cannot pay. It is good policy to maintain that backstop even if the liability cap and financial responsibility issues described above are addressed. The backstop provides insurance against unforeseen situations. In light of the magnitude of damages from the *Deepwater Horizon*, the current limit of $1 billion per incident is "clearly inadequate" and "raising the limit would help ensure that victims have access to compensation without the need to seek further specific funding from Congress, or otherwise burdening the taxpayer."[224] Maintaining sufficient funds in the OSLTF will require resurrecting the per-barrel tax that has lapsed.[225]
- *Interrelationship of these issues*. The National Commission noted:

> [A]ttempts to raise the cap and financial responsibility requirements to significantly higher levels have been met with the argument that these changes will cause insurance carriers to drop oil pollution coverage, leading to an exodus of small and independent companies from the offshore drilling market. The counter-argument is that oil companies should bear the social costs of their activities, and if those costs are too large or unpredictable to be insurable, then it is appropriate that these companies exit the market.[226]

The National Commission offered several suggestions to address these concerns, including creating mutual insurance pools and phasing in the changes in liability limits.[227] These are issues that Congress must consider when crafting changes to the statute.

3. Rent and Royalty Provisions

In addition to revenue from selling leases and fees to fund reviews and inspections, the federal government receives money from companies in the form of rents and royalties. Generally, royalties are payments companies make to the Treasury calculated as a percentage of the volume of oil or natural gas extracted. Rents are payments made during the period of time a company holds a lease and has not produced oil or gas from it. OCSLA specifically allows DOI to charge rent, but the statute does not proscribe the agency's discretion.[228] DOI generally "commonly uses escalating rental rates to encourage faster exploration and development of leases, and earlier relinquishment when exploration is unlikely to be undertaken by the current lessee."[229]

Congress could address two independent issues with regard to rent and royalty payments. First, the payments do not account for the social and environmental externalities associated with offshore drilling activities. Externalities include impacts like air and water pollution and emission of greenhouse gases, which are borne by the public. These costs are significant and—as noted above—quantifiable. Companies could be required to pay for them. Doing so would help ensure the government is receiving fair market value for the resources.

Second, the rent provisions could be formalized to increase the incentive for companies to either explore or relinquish leases. The issue of companies stockpiling leases drew significant attention in Congress after the *Deepwater Horizon* disaster, prompting lawmakers to introduce several "use it or lose it" bills.[230] These bills were never enacted, and companies are still allowed to purchase leases and leave them unexplored for their 10-year terms. In the Arctic, in fact, companies have sought extensions—called "suspensions of operations"—for leases on which they have not explored,[231] and legislation has been introduced to extend the terms of leases in the Arctic.[232]

DOI could take these actions under the existing law. In fact, arguments have been made that the agency should,[233] but there has been no movement to do so. Congressional action is needed.

4. Fund Science and Preparedness

As explained above, decisions about our ocean are often made more difficult by lack of basic scientific information. This issue is particularly acute in the Arctic, where rapid changes in the region as a result of climate change and ocean acidification make it all the more important to have baseline information to guide management decisions.[234]

224. National Commission, *supra* note 3, at 286. Legislation has been introduced to achieve these goals as well. *See* Big Oil Bailout Prevention Trust Fund Act of 2018, S. 3756, 115th Cong. (2018).
225. *See supra* Section III.D.1. (discussing per-barrel tax to fund the OSLTF).
226. National Commission, *supra* note 3, at 285.
227. *Id*.
228. 43 U.S.C. §1337(b)(6) (stating that leases may "contain such rental and other provisions as the Secretary may prescribe at the time of offering the area for lease").
229. *See* Jayni Foley Hein, Institute 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 11 (2015), *available at* https://policyintegrity.org/files/publications/DOI_LeasingReport.pdf.
230. *See*, *e.g.*, Steve Hargreaves, *Drilling Dilemma: Oil Industry Leases Untapped*, CNN Money, June 8, 2011 (noting "members of Congress have proposed shortening the period for which leases are awarded—a so-called 'use it or lose it' provision"), https://money.cnn.com/2011/06/06/news/economy/oil_drilling_leases/index.htm; *see also The Big Pander to Big Oil*, N.Y. Times, June 19, 2008 (observing that members of the House introduced "use it or lose it" bills designed to require oil companies "to begin exploiting the leases they have before getting any more," and noting that companion bills were introduced in the Senate), https://www.nytimes.com/2008/06/19/opinion/19thu1.html.
231. *See* 30 C.F.R. §§250.168-.177 (detailing regulatory requirements for suspension of OCS leases).
232. *See* S. 1278, 114th Cong. §3 (introduced May 11, 2015) (extending existing leases in the U.S. Arctic and amending OCSLA to provide for 20-year lease terms for OCS leases in the Beaufort and Chukchi Seas).
233. Hein, *supra* note 229, at 18-23; *see also* Hartsig et al., *supra* note 73, at 25-26.
234. U.S. Geological Survey, Circular No. 1370, An Evaluation of the Science Needs to Inform Decisions on Outer Continental Shelf

Funding is needed to pay for baseline science so that managers have access to good information before they make decisions about whether, where, and when areas may be made available for leasing. Funding for long-term scientific monitoring and observation programs is necessary to ensure the impacts of OCS activities are evaluated on an ongoing basis. More broadly, funding is necessary to support programs designed to protect, maintain, or restore marine ecosystems. In areas where exploration, development, or production activities are underway, funding is also necessary to pay for safety inspections, spur innovations in spill prevention and response technologies, and hire and train additional government safety inspectors, scientists, engineers, and other OCS professionals.

It may be possible to provide funding to fill some of these needs with minor changes to OPA 90. As explained above, OPA 90 authorizes certain uses of the OSLTF,[235] which has been funded from a per-barrel tax on oil production. Congress could amend OPA 90 to collect and direct funds to be used to support baseline ocean science, safety and compliance, and development of spill prevention and response technologies.[236]

Congress could also take the bolder step of establishing a permanently appropriated, dedicated funding source for ocean, coastal, and Great Lakes conservation and management. Given the actual and potential damage that oil and gas activities can inflict on the marine and coastal ecosystems, a portion of OCS revenues could be directed to ocean protection, maintenance, and restoration. The CLEAR Act, for example, proposed establishment of an Ocean Resources Conservation and Assistance Fund.[237] The fund would have been capitalized annually with 10% of revenues derived from offshore oil and gas energy development.[238] Monies from the fund would have supported grants for "activities that contribute to the conservation, protection, maintenance, and restoration of ocean, coastal, and Great Lakes ecosystems."[239]

If Congress implements either of these funding programs, it should ensure public access to data and other information generated under the programs, including information gathered in the course of research and planning, as well as information generated after an oil spill.

IV. Conclusion and Path Forward

The laws that govern OCS oil and gas activities have not kept pace with a changing oil and gas industry or with changing knowledge and attitudes about the marine environment. Most notably, when lawmakers last made significant changes to OCSLA in 1978, climate change and ocean acidification were not significant issues. It is clear that we need fundamental change in the basic governance of ocean resources and a movement toward renewable sources of energy.

Along the way toward that ultimate goal, changes to the statutory framework for offshore oil and gas activities are also warranted. To that end, Congress should undertake comprehensive reform that addresses the changes outlined above. Given Congress' failure to implement any legislation in the wake of the *Deepwater Horizon* disaster and the increasing politicization of these issues, we recognize that such legislation is a significant task. Incremental steps could include preventing the rollback of the safety and prevention rules implemented during the Obama Administration, as well as oversight and other hearings focused on safety and prevention, science, and the costs and benefits of moving forward with new leasing and other activities.

Energy Development in the Chukchi and Beaufort Seas, Alaska 217-21 (Leslie Holland-Bartels & Brenda Pierce eds., 2011) (supporting need for additional Arctic science), *available at* https://pubs.usgs.gov/circ/1370/pdf/circ1370.pdf; *see also* Clement et al., *supra* note 106, at 32 ("Shifts in Arctic climate variables, as well as terrestrial and marine ecosystems, should be monitored through rigorous, interdisciplinary research programs that collect and disseminate the best data and analyses to support environmental, economic, and cultural decision-making.").

235. 33 U.S.C. §2712(a) (listing uses of fund).
236. *See supra* Section III.D.1.
237. CLEAR Act, H.R. 3534, 111th Cong. §§207, 605 (2010).
238. *Id.* §207.
239. *Id.* §605.