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Are Ocean Wind Turbines Like Homesteads and Gold Mines and Railroads? A Public Lands Policy Question for the Climate Change Era

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**Are Ocean Wind Turbines like Homesteads and
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A Public Lands Policy Question for the Climate Change Era**

Thomas C. Jensen, Hadassah M. Reimer, and Lauren R. Caplan*

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INTRODUCTION

This article is concerned with development of America’s ocean wind resources on federal offshore lands. Our focus is on this question: If United States policymakers conclude that the national interest would be served by accelerating deployment of ocean wind energy, does the history of United States public lands policy offer ideas for actions to stimulate development? This article will touch on tax and environmental policy related to renewable energy, but only briefly, and while we describe the current ocean wind siting regulatory regime, we are not providing a how-to guide for developers or critics. Our goal is to expand the current policy discussion by offering examples from the nation’s history of public lands policy that suggest an additional, supplemental, way of thinking about how to bring ocean wind into the energy marketplace.

United States energy policy is evolving in a direction to favor domestic renewable and low-carbon energy resources. The direction of change is becoming clear, even if the pace and details are not. Substantial disagreements remain, but, in time, the United States seems destined to shift its energy generation portfolio heavily toward domestic wind, solar, other renewables, and natural gas.

Natural gas abundance is the story of the day, as new extraction techniques boost gas supplies, cut prices, and push down demand for other fossil and conventional fuels. But the renewable energy industry has been busy in the United States—at least onshore. More than 48,600 megawatts

(“MW”) in wind generation are online today,¹ along with 7,700 MW of installed solar electric capacity.² Approximately twenty percent of existing wind generation is on federal land, all onshore.³

The size of the ocean wind resource is great—four times the total United States electricity generation capacity today by one estimate.⁴ Its location is near to many of the nation’s largest economic centers. The ocean wind resource is rich and in a good place. European and Asian countries have moved aggressively to develop ocean wind and at least 55 projects are in operation.⁵ No offshore wind projects exist in the United States today, though several pioneering projects are moving forward toward development.

United States policymakers have begun to understand how to tap ocean wind, but are only at the threshold of that effort. The Obama Administration’s steps to promote ocean wind energy have been, quite literally, unprecedented. The President and his key cabinet officials have made renewables, including ocean wind, key elements of the Administration’s energy policy.⁶ Virtually all the prime development areas—those with the highest and steadiest wind speeds—are located in federal waters where use of the seabed is under the jurisdiction of the United States Department of the Interior (“DOI” or the “Interior

1. Bureau of Land Management (BLM), *Fact Sheet: Renewable Energy and the BLM*, http://www.blm.gov/pgdata/etc/medialib/blm/wo/minerals__realty__and_resource_protection/_energy/solar_and_wind.Par.38552.File.dat/Wind_12_2012.pdf (last updated January 2013).

2. Solar Energy Industries Association, *Solar Industry Data*, <http://www.seia.org/research-resources/solar-industry-data> (accessed April 17, 2013).

3. BLM, *Energy*, <http://www.blm.gov/or/energy/> (accessed April 17, 2013).

4. Bureau of Energy Management (BOEM), Offshore Wind Energy, <http://www.boem.gov/Renewable-Energy-Program/Renewable-Energy-Guide/Offshore-Wind-Energy.aspx>.

5. See European Wind Energy Association, *The European Offshore Wind Industry – Key Trends and Statistics 2012* 3 (January 2013) (describing the 55 operational offshore wind projects in Europe); LI Junfeng, et al., *China Wind Energy Outlook 2012* ES-1, <http://www.gwec.net/wp-content/uploads/2012/11/China-Outlook-2012-EN.pdf> (describing the 38 offshore wind projects in the development phase in China).

6. See generally The White House, *Energy, Climate Change and Our Environment*, <http://www.whitehouse.gov/energy/securing-american-energy#energy-menu>.

Department”).⁷ It would be difficult to overstate the challenge faced by Interior Department officials, other agencies, and all categories of stakeholders in creating a new regulatory regime for a brand new industry seeking to make new industrial use of the oceans.⁸ The current Administration’s efforts have opened the door and allowed a small number of investors to begin moving forward with development plans. That such progress has occurred in just a few years is a credit to the quality of effort brought to the task by people in government, the energy industry, academia, the marine conservation community, and others.

The actual scale of the challenge to those who have worked to elevate ocean wind development as a public policy is suggested by the fact that the national ocean policy announced by the Obama Administration in 2010 makes only the briefest passing reference to ocean renewable energy development, and only as a future use to be considered within a comprehensive management scheme alongside every other existing and potential use of the oceans.⁹ While the Administration’s policy document cites the risk to ocean ecosystems from climate change, and includes two pictures of ocean wind installations (in other countries), the potential role of the United States’ oceans in hosting renewable technology draws no actual analysis.¹⁰

7. See generally Marc Schwartz, Donna Heimiller et al., *Assessment of Offshore Wind Energy Resources for the United States* (June 2010), available at http://www.windpoweringamerica.gov/pdfs/offshore/offshore_wind_resource_assessment.pdf; DOE Wind Program Resource Assessment & Characterization, http://www1.eere.energy.gov/wind/resource_assessment_characterization.html.

8. A 2007 article written by one of the authors described the ocean renewable energy regulatory system as “a patchwork of policies and rules written primarily for other needs. It manages to be fragmented and redundant, prescriptive and vague, authoritarian and leaderless. The overall effect of the rules is confused; they do not say “No” to offshore renewable development, but they do not say “Yes” either.” Thomas C. Jensen, *Offshore Renewable Energy Development after the Energy Policy Act of 2005* 2 (36th Conference on Environmental Law, ABA Section of the Environment, Energy and Resources 2007), (available at <http://www.oceanrenewable.com/wp-content/uploads/2007/03/aba-ocs-paper-final.pdf>). The law has not changed since then, and the Administration’s progress should be seen against that backdrop.

9. Exec. Procl. 13547, 75 Fed. Reg. 43023 (July 19, 2010) [hereinafter *Exec. Procl. 13547*]. (The Presidential Executive Order establishing the National Ocean Council to implement the policy does not mention ocean renewable energy).

10. Exec. Procl. 13547, *supra*. n. 9, at 41, 55.

The current Administration's ocean wind promotion efforts have been unprecedented, but the underlying legal regime for ocean wind development is premised on the traditional approach taken to oil and gas leasing in federal waters, a legal regime rooted in a different era, for a different industry. The current Administration's efforts to encourage ocean wind development have been grafted onto, and necessarily constrained by, the premise of current law that the United States is a landlord, energy developers are tenants, energy uses consume the landlord's estate, and the landlord is owed a direct financial return by the tenant.

The Constitution gives Congress the power to "dispose of and make all needful Rules and Regulations respecting the Territory or other Property belonging to the United States."¹¹ That broad writ offers Congress ample room to consider many policy options for ocean wind beyond current law. Seen against the backdrop of a changing atmosphere, the gap between the resource to be developed and development of the resource compels the question whether more can be done.

This article describes the ocean wind resource, the state of the industry as of mid-2013, and current federal ocean wind policy. Turning to look back, the article offers an overview of historical public lands laws and programs that were key tools in using the public domain for the benefit of the country. Of course, the nation's priorities have changed with time, the country has grown wiser about natural resource decision-making, and every old public lands law has features that would be wrong for today's world. But those laws made things happen that the nation wanted done. Some details of the older public lands laws are obsolete, but their effectiveness remains relevant, and they deserve careful consideration for the lessons they offer now.

The final section of the paper suggests several ways policymakers might apply the lessons of older public lands laws to ocean wind energy. In short, and at the risk of overgeneralization, the United States made big things happen when it traded ownership for development, sovereign prerogative for private investment, and one good for another. The nation has learned painful lessons about how some development of public resources has adverse social costs, including degradation of the oceans. Failure to develop key resources—including domestic renewable (and other) energy resources—has social costs, too.

11. U.S. Const.. art. IV, § 3, cl. 2.

The article does not attempt to answer the question whether the impacts of climate change shift the equation such that the country should now trade some of its ownership of marine public lands in exchange for wind energy. But we think it is a prudent, albeit challenging, question. We offer suggestions for ways to think about the answer, recognizing that Americans have a special bond with the oceans that make it difficult to discuss even small policy changes to encourage development. In an era of climate change concern, no option for use of public resources should be off the table as a potential policy tool. Every choice available to policymakers deserves rational consideration.

I. THE OCEAN WIND RESOURCE IN THE ERA OF CLIMATE CHANGE

The ocean wind resource in United States marine waters is estimated to be as large as 4,223 gigawatts (“GW”),¹² with as many as 1,372 terawatt hours of electricity available off the East Coast alone.¹³ The low estimate of the resource is roughly four times the generating capacity of the current United States electric grid.¹⁴

Ocean wind is a green energy asset owned by the American people. It is an energy source for the country that will be available forever. It can be found in undeveloped areas near almost all coastal urban centers. It is of a potential scale that dwarfs most other alternatives, and is big enough to shrink the United States’ carbon footprint toward fitting even the most constrictive greenhouse gas policy.

Today, America’s ocean wind energy is unharvested. While thousands of turbines spin onshore, and nations around the globe have developed at least 57 marine wind projects,¹⁵ no turbines have been sited

12. BOEM, *Offshore Wind Energy*, <http://www.boem.gov/Renewable-Energy-Program/Renewable-Energy-Guide/Offshore-Wind-Energy.aspx> (accessed April 17, 2013).

13. Bjorn Carey, *Stanford Report, Offshore wind energy could power entire U.S. East Coast*, *Stanford scientists say*, <http://news.stanford.edu/news/2012/september/offshore-wind-energy-091412.html> (Sept. 14, 2012).

14. BOEM, *Offshore Wind Energy*, supra n. 4.

15. Energy and Environmental Management (EAEM), *The EAEM Guide to the UK Offshore Energy Development*, Global Wind Energy Council, *Global*

in United States waters. An energy resource area larger than the total landmass of the United States,¹⁶ one wholly owned by the American people, is unused and wasted as a tool to power our communities.

The strong majority view among scientists is that greenhouse gas emissions are changing the Earth's atmosphere in ways that pose vast environmental, economic, and social risks.¹⁷ United States policymakers are divided about the science and the conclusions to be drawn from it. Many remain determined to promote traditional fossil fuels, while many others are pressing to find ways to drive down carbon emissions through development of renewable energy resources, conservation, sequestration, and other approaches.¹⁸ Extreme weather events and other changes have

Offshore: Current Status and Future Prospects, <http://www.eaem.co.uk/ebook/offshorewind/ebook.php?page=14> (Autumn 2012).

16. U.S. Commission on Ocean Policy, *An Ocean Blueprint for the 21st Century*, Final Report (Sept. 20, 2004).

17. Julia Pyper and Climatewire, *Scientific American*, *Nations Change Too Slowly to Combat Climate Change*, (Mar. 21, 2013) (“The world is already on its way to a warmer future, and without radical change, experts said yesterday, that temperature rise soon will reach crisis levels. Scientists estimate that the planet has already warmed by about 0.8 degree Celsius since the 1850s, and new projections put temperature rise as high as 4 degrees by the middle of the 21st century if current emissions levels persist.”); See Council on Economic Advisors, *2013 Economic Report of the President* 185 (March 2013) (“The most significant long-term pollution challenge facing America and the world is the anthropogenic emissions of greenhouse gases. The scientific consensus, as reflected in the 2009 assessment by the U.S. Global Change Research Program (USGCRP) on behalf of the National Science and Technology Council, is that anthropogenic emissions of greenhouse gases are causing changes in the climate that include rising average national and global temperatures, warming oceans, rising average sea levels, more extreme heat waves and storms, and extinctions of species and loss of biodiversity. A multitude of other impacts have been observed in every region of the country and virtually all economic sectors. As part of the United Nations Climate Change Conferences in Copenhagen and Cancun, the United States pledged to cut its carbon dioxide (CO₂) and other human-induced greenhouse gas emissions in the range of 17 percent below 2005 levels by 2020, and to meet its long-term goal of reducing emissions by 83 percent by 2050. Approximately 87 percent of U.S. anthropogenic emissions of all greenhouse gases (primarily CO₂ and methane) are energy-related, and fossil-fuel combustion accounts for approximately 94 percent of U.S. CO₂ emissions”).

18. An example of the advocacy by pro-fossil fuel interests and legislators can be found in H.R. 3409, a bill passed by the House of Representatives in 2012 entitled the “Stop the War on Coal Act.” The bill, which did not receive consideration in the Senate, included a range of provisions aimed at blocking regulations or other executive branch initiatives unfavorable to coal. Energy & Commerce Committee, *Stop the War on Coal Act* (H.R. 3409), 9 (Sept. 20, 2012), (available at

lent prominence and urgency to the issue, as exemplified by President Obama's pledge in his second inaugural address:

We, the people, still believe that our obligations as Americans are not just to ourselves, but to all posterity. We will respond to the threat of climate change, knowing that the failure to do so would betray our children and future generations. Some may still deny the overwhelming judgment of science, but none can avoid the devastating impact of raging fires and crippling drought and more powerful storms.

The path towards sustainable energy sources will be long and sometimes difficult. But America cannot resist this transition, we must lead it. We cannot cede to other nations the technology that will power new jobs and new industries, we must claim its promise. That's how we will maintain our economic vitality and our national treasure -- our forests and waterways, our crop lands and snow-capped peaks. That is how we will preserve our planet, commanded to our care by God. That's what will lend meaning to the creed our fathers once declared.¹⁹

In late June 2013, the President followed up his inaugural statement with a more specific set of directives to federal agencies to both reduce carbon emissions and prepare the country to adapt to the various environmental and other changes already underway because of changes in the atmosphere.²⁰

<http://energycommerce.house.gov/fact-sheet/stop-war-coal-act-hr-340>); Pete Kasperowicz, *House approves 'Stop the War on Coal' bill in last act before November election* (Sept. 21, 2012), (available at <http://thehill.com/blogs/floor-action/house/250957-house-approves-coal-deregulation-bill-in-last-act-before-election>). For a general overview of the advocacy associated with those seeking to reduce carbon emissions, see generally The White House, *Energy, Climate Change and our Environment*, (<http://www.whitehouse.gov/energy/>) (accessed Sept. 1, 2013).

19. Barack Obama, *Inaugural Address* (D.C. Jan. 21, 2013) (available at <http://www.whitehouse.gov/the-press-office/2013/01/21/inaugural-address-president-barack-obama>).

20. Barack Obama, *Remarks on Climate Change* (D.C. June 25, 2013) (available at <http://www.whitehouse.gov/the-press-office/2013/06/25/remarks->

European countries have installed more than 1,662 offshore wind turbines in marine areas.²¹ Japan is planning to build the world's largest offshore wind farm with 143 turbines.²² China has announced plans to have 5 million kilowatts of offshore wind capacity by 2015.²³ Those countries have relied heavily on financial subsidy programs to encourage ocean wind²⁴, and some, particularly those in heavily populated northern Europe, have far less onshore territory for wind projects than the United States, making offshore development more immediately attractive as a development option.²⁵ Energy subsidies invite debate, and local conditions are different in some ways, but the immediately relevant feature of other countries' policy choices is that they have worked. Other nations have found ways to stimulate an aggressive pioneering effort by wind developers to harvest and reap the benefits of ocean wind.

By contrast, the United States is stuck on the beach. The image is not entirely fair in an absolute sense: During the Bush Administration, Congress gave the Interior Department express authority to lease the seabed for renewable energy projects along with oil and gas.²⁶ The Obama Administration has set a goal of achieving 54 GW of deployed

president-climate-change). See, NY Times, *Obama Outlines Ambitious Plan to Cut Greenhouse Gases* (June 26, 2013), (available at http://www.nytimes.com/2013/06/26/us/politics/obama-plan-to-cut-greenhouse-gases.html?pagewanted=all&_r=0).

21. Offshore Wind Development Coalition, *Why Offshore Wind*, <http://offshorewinddc.org/why-offshore-wind/> (accessed Mar. 25, 2013).

22. Chris Rose, European Wind Energy Assn., *World's Largest Offshore Wind Farm Planned for Japanese Waters*, <http://www.ewea.org/blog/2013/01/worlds-largest-offshore-wind-farm-planned-for-japanese-waters/> (Jan. 23, 2013)

23. PR Newswire, *China's Offshore Wind Market Expected to Grow to US \$16 billion*, (Feb. 27, 2013) (available at <http://www.prnewswire.com/news-releases/chinas-offshore-wind-market-expected-to-grow-to-us16-billion-193557891.html>).

24. See, e.g., Alex Morales & Sally Bakewell, *U.K. Grants Offshore Wind Triple Market Electricity Rates*, Bloomberg (June 30, 2013) (available at <http://www.bloomberg.com/news/2013-06-27/u-k-to-pay-offshore-wind-companies-triple-market-rate-for-power.html>).

25. For information on the onshore and offshore wind development potential in Europe, see European Environment Agency, *Europe's onshore and offshore wind energy potential: An assessment of environmental and economic constraints* (EEA Technical Report No. 6/2009).

26. See *infra* nn. 49 to 53 and corresponding text.

offshore wind generating capacity by 2030,²⁷ enough to power the equivalent of 12.8 million homes.²⁸ It has taken small, but material steps to achieve it. The Administration has implemented a federal seabed leasing process, pressed the many agencies with ocean resource related jurisdiction to coordinate their pieces of the siting process, and funded wind technology research and development grants.²⁹ Congress has enacted general renewable energy incentives through the tax code, but has been unwilling to impose green energy mandates on utilities or other requirements that might aggressively stimulate ocean energy.³⁰

United States policy measures are showing some results, with one high-profile commercial project making substantial progress toward development off the Massachusetts coast,³¹ others entering the first stages

27. U.S. Department of Energy (DOE), Energy Efficiency and Renewable Energy, *A National Offshore Wind Strategy: Creating An Offshore Wind Energy Industry in the United States* iii (Feb. 7, 2011) [hereinafter National Offshore Wind Strategy].

28. American Wind Energy Assn. (AWEA), *America's Produced 50 Gigawatts Total U.S. Wind Power Capacity: What does 50 GW of Wind Power Mean?*, http://www.powerofwind.com/uploads/files/infographic_awea.jpg (accessed April 17, 2013).

29. *See infra* § IV.

30. A discussion of the regulatory system for other ocean renewable energy sources, such as tides and waves, is presented in Jack K. Sterne, Thomas C. Jensen, Julie Keil and Richard Roos-Collins with David Wand, *Symposium: The Seven Principles of Ocean Renewable Energy: A Shared Vision and Call for Action*, 14 Roger Williams U.L. Rev. 600 (2009); Mark Sherman, *Wave New World: Promoting Ocean Wave Energy Development Through Federal-State Coordination and Streamlined Licensing*, 39 *Env'tl. L.* 1161 (2009).

31. BOEM, *Cape Wind*, <http://www.boem.gov/Renewable-Energy-Program/Studies/Cape-Wind.aspx> (accessed April 17, 2013) (The Cape Wind Project proposed for federal waters off Massachusetts has been in development since 2001 and has received wide publicity as the developers have struggled against regulatory uncertainty and determined opposition. The project appears to be on the cusp of development as of early 2013.); Cape Wind, "Cape Wind Finalizes Engagement of Bank of Tokyo-Mitsubishi UFJ for Debt Financing," <http://www.capewind.org/news1314.htm> (Mar. 19, 2013) (Describing recent developments in the financing of the Cape Wind Project in Massachusetts.); David Richardson, *Grist: Beacon in the Smog*, "Cape Wind wins billions in backing, launches offshore wind in the U.S.," <http://grist.org/climate-energy/cape-wind-wins-a-few-billion-in-backing-launches-offshore-wind-in-the-u-s/> (accessed Mar. 27, 2013). See generally, Wendy Williams and Roger Whitcomb, *Cape Wind: Money, Celebrity, Class, Politics and the Battle for Our Energy Future on Nantucket Sound* (2007) (a lively telling of the first six or seven years of battles over the Cape Wind project).

of the siting process, and some small scale technology demonstration projects moving forward in Oregon, Maine, and other sites.³² Admirable for their ambition and entrepreneurial verve, and important as trailblazers, these projects, even taken together, are tiny, essentially invisible features of the energy landscape. By comparison to Europe and China, the United States is lagging in making use of its ocean wind energy resources.

Ocean wind development will not proceed in a substantial way without changes that bring its cost in closer alignment to other power sources. Until ocean wind is a better investment, most sources of capital will put their energy sector dollars elsewhere, and most electricity providers will look to other resources, particularly natural gas and onshore renewables.

The national debate on energy policy has offered numerous ideas—the carbon tax and renewable energy portfolio standards most notable among them—that would have the effect of making relatively high-cost resources like ocean wind more attractive to investors.³³ The merits of these proposals are worthy of very serious consideration, but converting ideas into lawmaking is a step that Congress seems unlikely to take any time soon. The amount of common ground between the parties on major features of energy policy seems limited to support for domestic natural gas production and a handful of tax incentives. Beyond that, it is not apparent that any other substantial policy idea circulating today can garner enough votes to win approval in both chambers.

A. *Restructuring Our Thinking about Ocean Wind Resources*

Promotion of ocean wind energy can be approached through different lenses. Should we think of the issue as a question of energy policy? Electricity policy? Ocean policy? Environmental policy? Whatever else it may be, ocean wind policy is fundamentally a question of

32. DOE, *Offshore Wind Technology*, http://www1.eere.energy.gov/wind/offshore_wind.html (accessed March 10, 2013).

33. For a discussion of the carbon tax, see Congressional Budget Office, *Effect of a Carbon Tax on the Economy and the Environment*, http://www.cbo.gov/sites/default/files/cbofiles/attachments/44223_Carbon_0.pdf (May 2013); Laura D'Andrea Tyson, *The Myriad Benefits of a Carbon Tax*, NY Times, <http://economix.blogs.nytimes.com/2013/06/28/the-myriad-benefits-of-a-carbon-tax/> (June 26, 2013); Wall Street Journal, “*CBO Report: The Pros and Cons of Carbon Tax*”, <http://blogs.wsj.com/washwire/2013/05/22/cbo-report-the-pros-and-cons-of-carbon-tax/> (May 22, 2013).

public lands policy. And thinking of ocean wind development as a public lands issue may offer policymakers a path forward that is more likely to result in actual policy-making. It may offer a way of thinking about the problem that can appeal to those who favor private markets and emphasize the spirit of private enterprise and those who want to stimulate non-carbon electricity generation and build the domestic renewable energy industry.

The United States marine waters are by far the nation's largest area of public lands. An area fifteen times larger than all the national forests,³⁴ and seventeen times bigger than Texas,³⁵ United States marine waters and submerged lands can be seen as this century's great wide open frontier—particularly with respect to the renewable energy potential. In many ways, United States policymakers stand today where earlier generations of leaders stood when deciding what our country would do with the land beyond the Alleghenies, with the Ohio Country, Louisiana Purchase, Oregon Territory, California, the Southwest, Alaska, and the Pacific territories. One way or another, the lands had come under the flag of the United States. They had resources in demand here and around the world. American citizens and others were willing to take great risks to go to those places and develop those resources. Bounders and scoundrels were mixed in with explorers, pioneers, and settlers. Enormous potential problems were obvious, but much was unknown. What policies would make sense? What risks were worth taking? Who would bear the cost to find out?

One generation after another, American leaders set public lands policies that fit their times. Mining, grazing, homesteading, railroads, irrigation, forests, parks, and wilderness have each seized lawmakers' attention and become governed in myriad ways. At each step, policymakers have struggled to reconcile the moral, legal, and policy dimensions of the nation's relationship with Native Americans.³⁶ Our

34. The U.S. Exclusive Economic Zone is 4,453,068 square miles. See Pew Oceans Commission, *America's Living Oceans* http://www.pewtrusts.org/uploadedFiles/wwwpewtrustsorg/Reports/Protecting_ocean_life/env_pew_oceans_final_report.pdf (May 2003). The U.S. Forest Service manages 193 million acres of national forests and grasslands. See U.S. Forest Service, *An Overview* 9, http://www.fs.fed.us/documents/USFS_An_Overview_0106MJS.pdf.

35. The square mileage of Texas is 261,123.71. See U.S. Census, *Texas*, <http://quickfacts.census.gov/qfd/states/48000.html>.

36. Scholarship on the story of the United States' interaction with Native Americans is too vast and complicated to cite a single definitive source. There is no better source than the body of work authored by Professor Charles Wilkinson, particularly *Blood Struggle: The Rise of Modern Indian Nations* (2005); *Fire on the*

policies have shifted from conquest to development to conservation and preservation as the successes and failures of earlier choices have become evident.³⁷

The set of laws governing use of the United States' marine territory is dominated by mid-20th century statutes that resolved key terms of the federal and state governments' respective sovereign and proprietary rights offshore. On top of the ownership decisions lies a body of law that is largely a product of negative lessons learned from overfishing, oil spills, coastal habitat degradation, and marine mammal hunting. Only one statutory provision speaks to development of ocean wind, and does so only in a cautious way, quite unlike the laws that settled the West.

II. OCEAN WIND ENERGY REGULATION TODAY

A. *The Federal Seabed Leasing Process*

The United States regulates its marine territory primarily through the Submerged Lands Act³⁸ and the Outer Continental Shelf Lands Act (“OCSLA”), both enacted in 1953.³⁹ The OCSLA and SLA were prompted by the discovery and rapid exploitation of offshore oil and gas in the first half the 20th century.⁴⁰ Discoveries of major offshore fields in California and the Gulf Coast led to a boom in drilling and disagreements between the federal government and the states (and among the states) over which sovereigns owned the resource and would have power to levy royalties on those extracting it.

The Submerged Lands Act (SLA) of 1953 grants states title to all submerged navigable lands within their boundaries, including rivers and marine areas generally within three geographical miles offshore.⁴¹ The OCSLA secures to the federal government ownership rights over the Outer Continental Shelf (“OCS”), defined as all submerged lands lying seaward

Plateau: Conflict and Endurance in the American Southwest (1999); and *Messages from Franks Landing: A Story of Salmon, Treaties, and the Indian Way* (2000).

37. Lawrence J. MacDonnell and Sarah F. Bates, *The Evolution of Natural Resources Law and Policy* (ABA 2010).

38. 43 U.S.C. §§1301–1315 (2006).

39. *Id.* at § 1331-1356(a).

40. Robert Sollen, *An Ocean of Oil: A Century of Political Struggle Over Petroleum Off the California Coast* (Denali Press, 1998).

41. 43 U.S.C. § 1311.

of the state coastal waters.⁴² It also authorizes the Secretary of the Interior to administer mineral exploration and development on the OCS.⁴³

Over the years, the federal OCS leasing program has grown into a major revenue source for the federal government, with around \$4 billion collected annually.⁴⁴ The industry itself is reported to have invested more than \$80 billion in the Gulf of Mexico between 2008-2010, or more than \$25 billion per year.⁴⁵ Congress has from time-to-time directed changes in royalty collection practices to stimulate industry investment in exploration of deep water sites.⁴⁶

Federal leasing practices have grown in complexity as the industry has developed and impacts on marine resources have emerged, particularly in the wake of incidents like the Santa Barbara spill of 1969 and the Deepwater Horizon blowout of 2010.⁴⁷ The OCS oil and gas lease terms are extensive, providing for initial terms of up to ten years and extensions that may continue for as long as a lease produces revenue-generating oil or gas.⁴⁸ The process DOI uses to issue leases is complicated and expensive to a degree that mirrors the revenues; complexity and sophistication of the industry; and the tensions between oil and gas extraction and the many other public values of the oceans and coasts.

Congress amended the OCSLA with the Energy Policy Act of 2005 (“EPAAct”).⁴⁹ Section 388 of EPAAct gave DOI authority to issue leases for

42. *Id.* at § 1331(a).

43. *Id.* at § 1334.

44. National Oceanic and Atmospheric Administration (NOAA), *Offshore Oil and Gas*, <http://www.publicaffairs.noaa.gov/oceanreport/oilandgas.html> (accessed April 17, 2013).

45. Quest Economics, *The Economic Impacts of GoM Oil and Natural Gas Development on the U.S. Economy*, <http://www.scribd.com/doc/59786422/U-S-Gulf-of-Mexico-Oil-and-Natural-Gas-Industry-Economic-Impact-Analysis> (June 2011).

46. *See, e.g.*, Matthew Moerschbaecher and John W. Day, Jr., *Ultra-Deepwater Gulf of Mexico Oil and Gas: Energy Return on Financial Investment and a Preliminary Assessment of Energy Return on Energy Investment*, 3 *Sustainability* 2009 (2011) (explaining how Congress promoted investment in offshore oil by decreasing royalty fees through the Deepwater Royalty Relief Act).

47. DOI, *Salazar Launches Safety and Environmental Protection Reforms to Toughen Oversight of Offshore Oil and Gas Operations* (May 11, 2011) (<http://www.doi.gov/news/pressreleases/Salazar-Launches-Safety-and-Environmental-Protection-Reforms-to-Toughen-Oversight-of-Offshore-Oil-and-Gas-Operations.cfm>).

48. 30 C.F.R. § 556.37 (WL current through Oct. 1, 2011).

49. *See* Pub. L. No. 109-58, 119 Stat. 594 (2005) (codified throughout sections of Titles 26 U.S.C. and 42 U.S.C.).

offshore wind energy on the OCS.⁵⁰ EAct specifically authorizes DOI to grant leases for activities that (1) produce or support production, transportation, or transmission of energy from sources other than oil and gas, or (2) allow for alternate uses of existing facilities on the OCS. The law also gives DOI the authority to act as a lead agency for coordinating the permitting process with other federal agencies and to monitor and regulate those facilities used for renewable energy production and energy support services.⁵¹

The renewable energy leasing provision in EAct was Congress' answer to a different question than how best to promote ocean wind energy. The bitter fight over the Cape Wind project in federal waters off Massachusetts had revealed that no law expressly charged any specific federal agency with authority to lease the seabed for renewable energy purposes. DOI had clear oil and gas leasing power in the OCS, but the law was silent on leasing for renewables. Congress plugged the hole in the law (and frustrated Cape Wind opponents in the process) by granting DOI renewable leasing authority—but that is all they did.⁵² The law clarifies the landlord's authority to lease for renewable energy, but does not affirmatively promote ocean wind in any other way.⁵³

The provisions governing marine renewable leasing closely resemble the oil and gas leasing provisions of the OCSLA and imply that

50. *Energy Policy Act of 2005*, 42 U.S.C. §§ 13201–13253 (2006) (EAct does not supersede or modify any other federal authority, apply to areas designated as National Marine Sanctuaries, National Parks, National Wildlife Refuges, National Monuments, or cover ocean thermal energy resources); *see* 43 U.S.C. § 1337(p)(9).

51. 43 U.S.C. § 1337(p)(1).

52. Jensen, *supra* n. 8, at 3 (“The Act does not expressly authorize any specific offshore renewable project, but does provide limited special treatment for OCS projects that were in a permitting process prior to enactment of the new law. Section 388(d) allowed Interior to adopt the pre-existing permit applications for the purpose of Interior’s own review. As a practical matter, the only beneficiaries of that savings provision were the Cape Wind project and the proposed Long Island Offshore Wind Park, both of which were under review by the U.S. Army Corps of Engineers. Litigation brought by opponents of the Cape Wind project had contended that the Corps of Engineers lacked authority to site the project. Section 388 did not resolve that question, *per se*, but did firmly grant siting authority to the Interior Department.”)

53. *Id.* at 18. (“The Energy Policy Act marks progress for offshore renewable energy, but many questions remain unanswered. It will probably prove to be the case that the most substantial impact of Section 388 will be the focus it brings to the legislative choices Congress needs to confront in the next iteration of federal energy policy.”).

the law's drafters saw renewable energy principally as another revenue-generating use of the OCS: "The Secretary shall establish royalties, fees, rentals, bonuses, or other payments to ensure a fair return to the United States for any lease, easement, or right-of-way granted under this subsection."⁵⁴ DOI is implementing the law largely within the paradigm of its experience with oil and gas leasing; DOI's approach is that of a landlord, carefully choosing its tenants and collecting rents and fees.

DOI, acting through its Bureau of Ocean Energy Management ("BOEM"),⁵⁵ proposed its first OCS renewable energy leasing regulations in April 2009.⁵⁶ The regulations established a program by which BOEM could grant leases, easements, and rights-of-way for development of offshore wind farms on the OCS.⁵⁷ The new system allowed BOEM to offer both commercial and limited leases to interested parties through a competitive leasing process, with a limited exception for non-competitive leases.⁵⁸ Commercial leases convey all access and operational rights necessary to produce, sell, and deliver power on a commercial scale over a term of up to thirty years.⁵⁹ Limited leases give lessees access and operational rights for activities that support the production of energy, but they do not allow for the production of electricity or other energy products for sale, distribution, or other commercial use exceeding the specific limit set in the lease.⁶⁰ These limited leases have a set term of five years.⁶¹

54. 43 U.S.C. § 1337(p)(2).

55. The Obama Administration has changed the name of the agency responsible for wind development twice since 2010. *See* DOI, Interior Department Completes Reorganization of the Former MMS (Sept. 30, 2011) (<http://www.doi.gov/news/pressreleases/Interior-Department-Completes-Reorganization-of-the-Former-MMS.cfm>). Prior names include the Mineral Management Service and the Bureau of Ocean Energy Management, Regulation and Enforcement. These entities will be referred to as "BOEM" throughout this article.

56. *See* Renewable Energy and Alternate Uses of Existing Facilities on the Outer Continental Shelf, 74 Fed. Reg. 19,638 (Apr. 29, 2009); *see also* Press Release, Bureau of Ocean Energy Management, "President Obama, Secretary Salazar Announce Framework for Renewable Energy Development on the U.S. Outer Continental Shelf" (Apr. 22, 2009) (available at www.boem.gov/boem-newsroom/press-releases/2009/press0422.aspx) [hereinafter Renewable Energy Rule].

57. 30 C.F.R. §§ 585.200 – 585.206 (WL current through Oct. 1, 2012).

58. *Id.* at § 585.200.

59. *Id.* at § 585.235.

60. *Id.* at § 585.112.

61. *Id.* at § 585.236

BOEM initiates its competitive leasing process by publishing in the Federal Register a “Call for Information and Nominations” for leasing in specific areas.⁶² Interested parties have forty-five days from the date of publication to comment.⁶³ These comments must include the area of interest, a general description of the lease purpose, a proposed schedule, and all available and relevant data regarding renewable energy and environmental conditions in the area of interest.⁶⁴ BOEM then reviews this information and uses it to prepare a lease. Once the lease is prepared, the agency holds a competitive auction to award it.⁶⁵

BOEM leasing includes a multilayered fee schedule, including annual rent,⁶⁶ annual project easement rent,⁶⁷ annual operating fee,⁶⁸ and financial assurance requirements.⁶⁹ Rental rates are set at a per-acre rate for the project⁷⁰ and a per-mile rate for any transmission easement.⁷¹ The annual operating fee formula is based on the value of the anticipated annual power output of a project in a regional wholesale power market times an operating fee rate.⁷² The actual cost of the various fees will vary by location, and size of the project, but can easily amount to millions of dollars annually. The auction process BOEM intends to use in competitive lease situations will require up-front bonus payments to BOEM that will add further to the cost for the developer.⁷³

62. *Id.* at § 585.211(a).

63. *Id.*

64. *Id.* at § 585.213.

65. *Id.* at § 585.220(a) [These auctions can take the form of either sealed bidding, ascending bidding, two-state bidding (combination of sealed and ascending bidding), or multiple-factor bidding.]

66. *Id.* at § 585.503.

67. *Id.* at § 585.508.

68. *Id.* at § 585.506.

69. *Id.* at § 585.515.

70. *Id.* at § 585.503.

71. *Id.* at § 585.508.

72. *Id.* at § 585.506.

73. BOEM, PowerPoint, *Fiscal Terms*, slides 1 – 13 (Rhode Island/Massachusetts Public Seminar Presentation Jan. 13, 2013) (available at http://www.boem.gov/uploadedFiles/BOEM/Renewable_Energy_Program/State_Activities/RIMA%20Public%20Seminar%20Fiscal%20Terms%2011513.pdf) (Illustrating BOEM’s approach to fee collection as presented to potential bidders for leases off Rhode Island); BOEM, PowerPoint, *Fiscal Terms and Auction*, Format slides 1 – 38 (Rhode Island/Massachusetts Task Force Meeting Aug. 8, 2012) (available at http://www.boem.gov/uploadedFiles/BOEM/Renewable_Energy_Program/State_Activities

Deficiencies in BOEM's original 2009 leasing program became clear in its first year of implementation. The agency, applying many of the policies common to oil and gas leasing, had created a system that by any standard was slow and expensive, especially so for a new industry struggling to enter the market.⁷⁴ BOEM responded to wind industry

/RI%20Fiscal%20Terms%20and%20Auction%20Format%20Update%208-Aug-2012%20.pdf) (For an illustration of BOEM's auction format and expectations regarding bonus payments, see this presentation to potential Rhode Island bidders).

74. The offshore wind development industry, through a trade association, offered a detailed critique of the original BOEM regulations. The Offshore Wind Development Coalition called on BOEM to change the regulations to (1) shorten the seven-to-nine year timelines for leasing and permitting, largely by amending the regulations to allow offshore wind developers to obtain provisional leases designed to protect their interests while they collect the data needed for comprehensive Environmental Impact Statements ("EIS"); (2) change the governance structure to account for differences between oil and gas leasing and renewable energy development; and (3) remove the requirement that offshore wind developers pay operating fees based upon statewide average power price. See Letter from Jim Lanard, President of Offshore Wind Development Coalition, to Michael Bromwich, Director of BOEM (Sept. 9, 2010) (on file with authors). The first element of the industry's critique centered on the amount of time the agency would take to approve leasing and permitting. The industry association pointed out that the prolonged process discourages up-front investment, which in turn prevents developers from receiving the funding necessary to reach the operational phase of their projects. *Id.* at 4-5. Inability to obtain initial financing leaves developers to personally cover pre-construction expenditures before projects can generate revenue. Given uncertain prospects of success, inability to secure investment capital is a huge disincentive to entities interested in developing offshore wind infrastructure. *Id.* at 4-7. The association urged BOEM to shorten the timeline for offshore wind development by consolidating its EIS requirements. *Id.* at 6-8. Regulations at the time required two separate National Environmental Policy Act ("NEPA") reviews—one to evaluate the effects of issuing a lease and another to evaluate the effects of approving a Construction and Operating Plan. The industry stated that developers would be willing to hold off on acquiring a full commercial lease and instead accept a provisional lease if doing so would allow them to complete a site-specific EIS more quickly. *Id.* However, under the regulations, developers who did this would not be protected from conflicting claims asserted later in the site assessment process. Investors would be unwilling to support a project without assurance that they were likely to receive a return in the future. The association estimated that this leasing adjustment would cut two years from the seven-plus year leasing timeline. *Id.* at 7. The industry's critique called on BOEM to streamline its leasing process by reorganizing the governance structure to account for the differences between oil and gas activities and offshore wind development. The industry argued that the risks associated with oil and gas leasing are significantly higher than those associated with offshore wind. *Id.* at 8. It noted that the reorganization that created BOEM would require the agency to devote a significant amount of time to oil and gas activities, likely to the detriment of the Administration's renewable energy program. *Id.* at 8-9. It called on DOI to reorganize its leasing agencies to ensure that

objections by creating the “Smart from the Start” program in November 2010, and rewriting its regulations, in part.⁷⁵ The agency acknowledged that “substantial concerns have been raised about the prospect of a seven-to ten-year timeline for a new and untested approval process” and proposed three new initiatives to help facilitate the siting, leasing, and construction of new offshore wind projects.⁷⁶ These initiatives included simplifying the approval process where there is a single qualified developer, identifying priority Wind Energy Areas for development, simplifying the NEPA process at the leasing stage to allow use of an EA rather than an EIS, and processing applications to build offshore transmission lines.⁷⁷

The Smart from the Start initiative streamlined certain aspects of the offshore wind development process. Updated regulations regarding non-competitive leases may save lessees between six-to-twelve months of delay.⁷⁸ BOEM’s identification of Wind Energy Areas off the coasts of

renewable energy received the attention it deserved. *Id.* Finally, the industry called on BOEM to reform the royalty regulations to ensure that operating fee charges would not hinder project financing. *Id.* at 10. The regulations based revenue estimates on statewide average power prices, which include and therefore vary with fossil fuel prices. By keying wind revenue estimates to oil and gas, the regulations result in an increase in offshore wind farms’ operating fees, if the cost of generating power from fossil fuels rises. This would occur even if the wind farm’s actual revenues remained constant. *Id.* The industry association explained that such a pricing structure unnecessarily hinders wind development by causing rising operating fees to absorb potential revenues and slowing development and investment. *Id.* The association recommended that BOEM offer greater flexibility to offshore wind farms by exempting them from the existing fee calculation or by providing operating fee holidays. *Id.*

75. DOI, Salazar Launches ‘Smart from the Start’ Initiative to Speed Offshore Wind Energy Development off the Atlantic Coast (Nov. 23, 2010), <http://www.doi.gov/news/pressreleases/Salazar-Launches-Smart-from-the-Start-Initiative-to-Speed-Offshore-Wind-Energy-Development-off-the-Atlantic-Coast.cfm>.

76. See Press Release, DOI, *Frequently Asked Questions: ‘Smart from the Start’ Atlantic OCS Offshore Wind Initiative* (available at <http://www.doi.gov/news/pressreleases/loader.cfm?csModule=security/getfile&PageID=73317>) [hereinafter Smart from the Start Press Release].

77. BOEM, Press Release, *Frequently Asked Questions: ‘Smart from the Start’ Atlantic OCS Offshore Wind Initiative*, <http://www.doi.gov/news/pressreleases/loader.cfm?csModule=security/getfile&PageID=73318> (accessed April 17, 2013).

78. Press Release, DOI, *Salazar Launches ‘Smart from the Start’ Initiative to Speed Offshore Wind Energy Development off the Atlantic Coast* (Nov. 23, 2010) (available at <http://www.doi.gov/news/pressreleases/Salazar-Launches-Smart-from-the-Start-Initiative-to-Speed-Offshore-Wind-Energy-Development-off-the-Atlantic-Coast.cfm>)

Massachusetts, Rhode Island, New Jersey, Delaware, Maryland, and Virginia will also allow it to more efficiently assess development proposals and applications. Jumpstarting the NEPA process, the agency has initiated Environmental Assessments (“EAs”) in these areas to determine the potential effects that leasing and site assessment activities may have on the environment,⁷⁹ and some of these EAs have already produced results.

BOEM has issued two commercial wind leases, one off the coast of Massachusetts, and one off the coast of Delaware.⁸⁰ The Department is also moving forward with the competitive lease sales for Wind Energy Areas off Virginia, Rhode Island and Massachusetts.⁸¹ The competitive auctions will offer nearly 278,000 acres for wind energy development.⁸² The agency is also planning additional lease sales for Wind Energy Areas

[hereinafter Smart from the Start Press Release] *supra n.* 51, at 1 (BOEM’s original regulations provided two distinct processes applicable to non-competitive leases. One set allowed BOEM to publish a single public notice before awarding a lease to a party that submitted an unsolicited request for a non-competitive lease. The second set applied when only a single party responded to a Call for Information and Nominations. Regulations governing this situation required BOEM to publish a second public notice ensuring the absence of competition before proceeding with the award process. These regulations were streamlined in October 2011); *see* 76 Fed. Reg. 64432, 64741 (Oct. 18, 2011); *see also* 77 Fed. Reg. 1019 (Jan. 9, 2012).

79. Ken Salazar, Speech, *AWEA Offshore Wind Conference Remarks* (U.S. DOI, Baltimore, MD. Oct. 11, 2011) (transcript available at <http://www.doi.gov/news/speeches/AWEA-Offshore-Wind-Conference.cfm>).

80. BOEM, *Cape Wind*, <http://www.boem.gov/Renewable-Energy-Program/Current-Projects/Index.aspx> (accessed April 17, 2013) (The lease offshore of Massachusetts is located on Horseshoe Shoal in Nantucket Sound. The project will consist of 130 wind turbine generators with a total capacity of 468 megawatts. BOEM issued the lease offshore of Delaware for a 96,430 acre area. Bluewater Wind Delaware LLC, the lessee, will have the right to submit one or more plans for the development of an offshore wind facility.)

81. DOI, Press Release, *Interior Announces First-Ever Renewable Energy Lease Sales on the Outer Continental Shelf* (Nov. 30, 2012) (available at <http://www.doi.gov/news/pressreleases/interior-announces-first-ever-renewable-energy-lease-sales-on-the-outer-continental-shelf.cfm>).

82. *Id.* At the time of publication, BOEM had announced its intention to hold the first offshore renewable energy lease sale for two leases off the coast of Massachusetts and Rhode Island on July 31, 2013. DOI, BOEM to Auction Nearly 165,000 Acres Offshore Rhode Island and Massachusetts for Wind Energy Development in July (June 4, 2013), <http://www.doi.gov/news/pressreleases/interior-announces-first-offshore-renewable-energy-lease-sale.cfm>.

offshore of New Jersey, Maryland, and Massachusetts,⁸³ determining industry interest in three areas offshore North Carolina, and obtaining suggestions and recommendations for EAs of those areas.⁸⁴

The agency is also processing a lease request from a company that has received Department of Energy (“DOE”) funding to develop floating wind turbines that can operate in deep water on the Outer Continental Shelf off Maine.⁸⁵ BOEM issued a “finding of no competitive interest” for the project last December, and the company is preparing its Construction Operations Plan.⁸⁶ Once Interior receives that plan, the agency will conduct an Environmental Impact Statement.⁸⁷

BOEM is expecting to receive a lease request for a site off Oregon from another company that received DOE funding to develop floating wind turbine technology.⁸⁸ It is also carrying out planning and environmental work associated with a proposed mid-Atlantic wind energy transmission line along the East Coast. The “Atlantic Wind Connection” would run from southern Virginia to northern New Jersey, transmitting to the onshore grid power produced by wind facilities off New Jersey, Delaware, Maryland, and Virginia.⁸⁹ The project would bring as much as 7,000 MW of wind turbine capacity to the grid.⁹⁰

83. BOEM, *New Jersey*, <http://www.boem.gov/Renewable-Energy-Program/State-Activities/New-Jersey.aspx> (accessed April 17, 2013); BOEM, *Maryland*, <http://www.boem.gov/Renewable-Energy-Program/State-Activities/Maryland.aspx> (accessed April 17, 2013); BOEM, *Massachusetts*, <http://www.boem.gov/Renewable-Energy-Program/State-Activities/Massachusetts.aspx> (accessed April 17, 2013).

84. BOEM, *North Carolina*, <http://www.boem.gov/Renewable-Energy-Program/State-Activities/North-Carolina.aspx> (accessed April 17, 2013).

85. EERE Network News, *Interior Department to Review Proposal for First U.S. Floating Wind Turbine* (Aug. 15, 2012), (available at http://apps1.eere.energy.gov/news/news_detail.cfm/news_id=18554).

86. BOEM, *BOEM Announces Finding of No Competitive Interest for Commercial Wind Leasing Offshore Maine* (Dec. 18, 2012) (available at <http://www.boem.gov/BOEM-Newsroom/Press-Releases/2012/press12182012.aspx>).

87. *Id.*

88. Department of Energy, *Offshore Wind Technology*, https://www1.eere.energy.gov/wind/offshore_wind.html.

89. Atlantic Wind Connection, *About Us*, <http://atlanticwindconnection.com/awc-intro/> (accessed April 17, 2013).

90. BOEM, *Regional Proposals: The Atlantic Wind Connection*, iii (August 10, 2011) (available at http://www.boem.gov/uploadedFiles/BOEM/Renewable_Energy_Program/State_Activities/AWCApplication.pdf); see also Atlantic Wind Connection, *supra* n. 64.

B. Encouraging Agencies to Coordinate the Siting Process

The Obama Administration's efforts to promote offshore wind development have included efforts to press the many agencies with ocean resource-related jurisdiction to actively coordinate their pieces of the siting process. BOEM has entered into Memoranda of Understanding ("MOUs") with the Federal Energy Regulatory Commission ("FERC"), the National Oceanic and Atmospheric Administration ("NOAA"), and the DOE to resolve key interagency tensions.

BOEM entered into its first wind development-related MOU in April 2009 with FERC.⁹¹ Under this agreement, the agencies agreed that BOEM would have exclusive jurisdiction over non-hydrokinetic renewable energy projects, like wind, on the OCS, while FERC would retain exclusive jurisdiction to issue licenses and exemptions for hydrokinetic projects on the OCS.⁹² This agreement was purely jurisdictional, but it conclusively established BOEM as the authority for offshore wind leases.⁹³

A year later, in June 2010, DOI entered into an MOU with the DOE⁹⁴ stating that "it is a national priority to work to ensure the expeditious development of offshore wind," and vowed to collaborate to develop attainable development goals on the OCS.⁹⁵ This collaboration culminated in a joint report issued in 2011, which laid out a detailed action plan to achieve ten GW of deployed offshore wind generating capacity by 2020 and fifty-two GW by 2030.⁹⁶

91. Federal Energy Regulatory Commission (FERC), *Memorandum of Understanding between the U.S. Department of the Interior and Federal Energy Regulatory Commission* (April 9, 2009) (available at <http://www.ferc.gov/legal/maj-ord-reg/mou/mou-doi.pdf>).

92. *Id.* at 1.

93. See Todd Griest, *Harnessing the Ocean's Power: Opportunities in Renewable Ocean Energy Resources*, 16 *Ocean & Coastal L.J.* 395, 410-412 (2011) (Provides a discussion of the circumstances necessitating the FERC MOU).

94. DOI, *Memorandum of Understanding between the U.S. Department of the Interior and the U.S. Department of Energy for the Coordinated Deployment of Offshore Wind and Marine and Hydrokinetic Energy Technologies on the United States Outer Continental Shelf* (June 28, 2010) (available at www.doi.gov/whatwedo/energy/loader.cfm?csModule=security/getfile&PageID=37040).

95. *Id.* at 2.

96. See *National Offshore Wind Strategy*, *supra* n. 27, at i.

BOEM entered into a MOU with NOAA in May 2011 to set the roles the agencies will play in the licensing process.⁹⁷ BOEM will be the lead agency on any NEPA analysis related to offshore energy on the OCS, and NOAA agreed to provide timely consultation when necessary.⁹⁸ NOAA also agreed to work with BOEM and DOE to effectuate their strategies and eliminate duplication of their efforts in developing the OCS.⁹⁹

C. Wind Technology Research and Development Grants

DOE has begun issuing grants to promote advanced ocean wind technology demonstration projects. In 2011, DOE funded nineteen technology development projects intended to improve the engineering modeling tools necessary to reduce the cost of offshore facilities and to design the next generation of offshore turbines.¹⁰⁰ DOE also invested in twenty-three projects created to remove market barriers limiting the availability of offshore wind along the coasts and in the Great Lakes region.¹⁰¹ DOE expanded its funding of offshore wind development in December 2012, announcing that it had partnered with seven advanced technology demonstration projects that are developing “breakthrough” offshore wind energy generation technology that will reduce the cost of offshore wind.¹⁰² DOE is on track to award each of these seven projects up to four million dollars (\$4,000,000) to complete phase one of a two-phase program. Under this initial segment, grantees will develop and propose the engineering, site evaluation, and planning aspects of their projects.¹⁰³ DOE will then choose up to three grantees to advance to the

97. NOAA, *Memorandum of Understanding on Coordination and Collaboration Regarding Outer Continental Shelf Energy Development and Environmental Stewardship between the U.S. Department of Interior and the U.S. Department of Commerce* (May 19, 2011) (available at www.noaa.gov/stories2011/pdfs/05232011_NOAA-BOEMRE-MOU.pdf).

98. *Id.* at 4.

99. *Id.* at 5.

100. DOE, *Offshore Wind Technology*, http://www1.eere.energy.gov/wind/offshore_wind.html (accessed Mar. 22, 2013).

101. *Id.*

102. *Id.*

103. *Id.*

second phase, under which the projects will work to achieve commercial operation by 2017.¹⁰⁴

D. Investment and Production Tax Credits for Wind Energy Development

On January 1, 2013, Congress extended the renewable energy Investment Tax Credit (“ITC”) and Production Tax Credit (“PTC”) that had expired on December 31, 2012.¹⁰⁵ The ITC, which allows for an up-front tax credit equivalent to 30% of capital investments made in offshore wind development projects, serves as a substantial incentive for investors.¹⁰⁶ The ITC extension for ocean wind will apply to projects that start construction by January 1, 2014.¹⁰⁷ Ocean wind developers can also elect to forego the ITC in favor of the PTC, which was also extended on January 1, 2013. The PTC allows wind farm owners to receive a 2.2 cent per-kilowatt-hour tax credit for the first ten years of production on energy sold to third parties.¹⁰⁸

III. HISTORICAL MODELS – GOVERNMENT-PROPELLED DEVELOPMENT OF THE AMERICAN FRONTIER

Well into the 20th century, United States policymaking on key domestic and international matters was driven by the quest to control and use the continent, to “settle” the West. The drive to build national and personal wealth converged on the public lands. Policy reflected the compelling, albeit romanticized vision of the public lands as an El Dorado of opportunity for the yeoman farmer or rancher, miner, trapper, logger, and small businessman, who, if willing to work tirelessly, could make an

104. *Id.*

105. Matthew L. Wald, *The Wind Industry Gets to Draw Another Breath*, New York Times, (Jan. 3, 2013) (available at <http://green.blogs.nytimes.com/2013/01/03/the-wind-industry-gets-to-draw-another-breath/>) [hereinafter Wald].

106. Database of State Incentives for Renewable Energy (DSIRE), *Business Energy Investment Tax Credit (ITC)* (Jan. 3, 2013) (available at http://www.dsireusa.org/incentives/incentive.cfm?Incentive_Code=US02F).

107. AWEA, *Federal Policy*, http://www.awea.org/issues/federal_policy/index.cfm (accessed April 17, 2013).

108. *Id.*; AWEA, *Production Tax Credit PTC*, http://awea.org/issues/federal_policy/upload/PTC_April-2011.pdf (accessed May 30, 2013).

honorable life on the vast open landscape. Millions of acres awaited enterprising young men and women, whose only chore was to take and cultivate the natural bounty of the land. The western territories clamored for settlers to populate their landscapes and propel them into statehood.

The federal government, which owned most of the land west of the Mississippi, was integral in encouraging western settlement. As one historian wrote: “Land in its seemingly inexhaustible abundance stands at the heart of American history, intertwining Americans’ material lives and cultural perception.”¹⁰⁹ The philosophy of the 19th century was that it was the government’s responsibility not to hold on to and manage western lands, but to disseminate them to the American people who would work and live off of the lands. In the early 1800s, the federal government offered the public lands for sale at extremely low prices. Squatters who had claimed land without government approval were often offered an even lower price to purchase the lands they had settled.¹¹⁰ When sales declined, as the most arable lands were claimed, the government turned to outright giveaways to those who would promise to live on and work the land. To prompt major capital investment, the government granted vast areas of land for the building of bridges, dams, canals, railroads, and universities. Miners were offered land in exchange for the development of the nation’s mineral wealth.

The following section discusses several of the most prominent government programs encouraging private development of the American West through disposal of some or all of the government’s ownership inlands and resources. We also highlight related initiatives to use public funds and authority to encourage private development of public lands. These programs all had problems that others have explored in depth.¹¹¹ We cite these programs because, simply, they made development happen. Lessons learned from these historical models may be applied to development of the modern frontier of renewable ocean wind energy.

109. Robert Bunting, *Introduction, the West and Its Forests*, 38 J.of the West 5 (Vol. 4 1999).

110. Paul Wallace Gates, *History of Public Land Law Development*, Chapter XV, 387 – 390 (1968).

111. See generally Patricia Nelson Limerick, *The Legacy of Conquest: The Unbroken Past of the American West* (1988); Charles Wilkinson, *Crossing the Next Meridian: Land, Water, and the Future of the West* (1992); Marc Reisner, *Cadillac Desert: The American West and its Disappearing Water* (1986).

*A. Homesteading the West**1. The 1862 Homestead Act*

By the mid-1800s, much of the best farmland west of the Appalachians had been sold to settlers and speculators. Eastern cities, growing with immigration and industrialization, grappled with a large class of unemployed immigrant poor who could not afford to buy land, even at the substantially reduced prices offered by the government.¹¹² The National Land Reform movement, which espoused the theory of natural rights, including the right of every man to a share of the soil, pressed Congress for legislation granting free land to settlers.¹¹³ Reform advocates believed that land grants would draw westward the overabundance of jobless and working poor who depressed wages, weakened the bargaining position of labor, and presented an array of social challenges.¹¹⁴

Detractors argued that free land would discriminate against early settlers who had paid for their lands, be unfair to veterans (who received land grants by diminishing the value of their lands), provide a boon to western settlers beyond any value given to eastern settlers, depress land values, enable capitalists using dummy settlers to accumulate large tracts, give unfair advantages to foreigners, and drastically reduce the income from public lands.¹¹⁵ The politics of slavery greatly complicated federal land policy, as slave states resisted changes that would weaken their economic and political position.¹¹⁶ Out West, while some speculators and business people feared opening the public lands to free settlement, the pressure for progress and growth was greater.¹¹⁷

112. *Id.* at 391-92.

113. *Id.* at 390-93; *see also* Karin P. Sheldon, *How Did We Get Here? Looking to History to Understand Conflicts in Public Land Governance Today*, 23 *Publ. Land & Res. L. Rev.* 1, 7 (2002) (“The fine hand of Locke is visible in the Homestead Act. By work and sweat an individual could end up as a property owner - the Jeffersonian ideal of the “hardy yeoman.” This concept of the rugged individual taming the wilderness to create the basic unit of democracy is one of our most compelling and enduring ideas.”).

114. Gates, *supra* n. 85, at 391.

115. *Id.* at 393.

116. *Id.* at 392.

117. *Id.* at 392-93.

Finally, in 1862, when the southern states could no longer object, Congress enacted the Homestead Act. The act gave away the public lands in 160-acre parcels to settlers who would live on and farm the land for five years.¹¹⁸ After farming the land for five years, the settler could obtain fee simple title for a small filing fee.¹¹⁹ All surveyed lands on which Indian title had been extinguished were eligible for settlement. In 1880, the act was expanded to apply to unsurveyed lands.¹²⁰

Between 1868 and 1904, nearly 100 million acres were settled under the Homestead Act, many by the small farmers the Homestead Act was expressly intended to benefit. Between 1880 and 1900, 500,000 farms were created.¹²¹ The Homestead Act achieved its purpose of disposing of the public lands in the name of progress, but not without serious problems. Most of the land that remained available for homesteading was semi-arid and impossible to make productive in farming units of 160 acres or less.¹²² Indeed, the Homestead Act has been criticized by many as being wholly misinformed by the farming experience of the green and humid lands in the east, which did not take into account the realities of the Great Plains and Great American Desert.¹²³ Administration of the Homestead Act was rife with fraud as homesteaders perjured themselves to obtain multiple claims, or larger claims.¹²⁴ Smaller farms that could not make a living either went bust or were purchased by larger landholdings.

Lands granted under the Homestead Act did not always benefit actual settlers. Speculation, which had been a major concern under the land sale system, was rampant, and Congress' failure to repeal cash sale laws along with the Homestead Act meant speculators could buy up the choice lands at \$1.25/acre just ahead of free settlement.¹²⁵ Other problems arose as homesteads were sometimes used as a pretense to strip

118. *Homestead Act of 1862*, 43 U.S.C. §§ 161 *et seq.* (repealed 1976), <http://www.nps.gov/home/historyculture/upload/mw.pdf,homestead%20act.txt.pdf>.

119. Gates, *supra* n. 85, at 394.

120. *Id.*

121. George Cameron Coggins, Charles F. Wilkinson and John D. Leshy, *Federal Public Land and Resources* 79 (5th ed. 2002).

122. Gates *supra* n. 85, at 399; David Getches, *Water Wrongs: Why Can't We Get it Right the First Time?*, 34 *Envtl. L.* 1, 8 (2004).

123. Karin P. Sheldon, *supra* n. 87, at 8; Charles F. Wilkinson, *supra* n. 111, at 22.

124. Gates *supra* n. 85, at 477-78.

125. Gates, *supra* n. 85, at 395; *see also id.* at 436.

the public lands of valuable timber and other resources with no intent to farm the land or obtain a patent.¹²⁶ Some large livestock interests gamed the homestead laws, entering lands necessary to control water in downstream regions, effectively shutting out other settlers, and using the intervening public rangelands as de facto personal ranches.¹²⁷ Indian Tribes also fell victim to the country's haste to dispose of the public lands, as treaties were breached and many tribes were coerced to break up reservations into allotments for individual tribal owners, which were then often purchased or obtained by other devices by non-tribal interests.¹²⁸

For all its drawbacks, the Homestead Act worked. The law expanded development across the western frontier, with millions of acres settled.¹²⁹ At the close of the homestead era, the landscape of the American West was forever reshaped.

2. *The Desert Land Act*

The Homestead Act was more successful in the areas east of the 100th meridian where rainfall was adequate to grow crops than on the arid public land to the west, which often needed large expenditures of capital to bring water onto the land through irrigation.¹³⁰ The required capital investment discouraged farming, especially small blocks.¹³¹ In response,

126. *Id.* at 395-96; 417-19.

127. *Id.* at 466-67.

128. *Id.* at 463-66.

129. *See id.* at 480-82 (detailing some of the successes for small farm creation).

130. Gates, *supra* n. 85, at 401. Donald Worster, *Rivers of Empire: Water, Aridity and the Growth of the American West* (1985) Reisner, *supra* n. 111, at 43 ("Neither Congress nor the General Land Office, which was responsible for administering the acts, could ever comprehend that the relative success of the land program east of the Mississippi River had less to do with the perseverance of the settlers or the wisdom of the legislation than with the forgiving nature of the climate. In the East, virtually every acre received enough rainfall, except during years of extraordinary drought to grow most anything that didn't mind the soil and temperatures.").

131. Gates, *supra* n. 85, at 401; Reisner, *supra* n. 111, at 48; Wallace Stegner, *Beyond the Hundredth Meridian* (1954) ("It was clear that individual initiative and individual labor and individual capital were inadequate to develop the irrigation works needed on an arid-belt farm unless the farm were located high on the headwaters of a small stream. It was equally clear that the earliest development would be and had been on these high small streams, and that on the larger and lower reaches

and with little attempt to address the pitfalls of and criticisms lodged against the Homestead Act,¹³² Congress passed the Desert Land Act of 1877.¹³³ John Wesley Powell and others questioned the wisdom of the act, reporting that more than three-fourths of claims on desert lands would require investment of a million dollars or more to achieve the necessary irrigation.¹³⁴

Under the Desert Land Act, a settler could claim up to 640 acres at \$0.25/acre and could patent the land upon proof of irrigation.¹³⁵ Thirty-three million acres were entered under the Desert Land Act, though only 10 million acres were patented—evidence of the difficulty in meeting the irrigation requirements.¹³⁶ The act was largely unsuccessful in encouraging irrigation and farming on the desert lands. Most lands were used for stock grazing, or to secure water rights, and the majority ended up in the hands of large corporations.¹³⁷ For those claims that were patented, many were based on fraud. Stories are common of settlers perjuring themselves with testimony of irrigation when only a single cup of water had been brought to and poured on the claim.¹³⁸

3. *The Stock-Raising Homestead Act*

In 1916, with most good (and a lot of poor), land homesteaded, the chief use of the remaining “open” public lands was for grazing.¹³⁹ Still in the disposal mindset, and against the objection of cattlemen who lamented the breakup and fencing of the western range, Congress enacted the last of the great homesteading acts — the Stock-Raising Homestead

where cultivable land was much more extensive and the growing season longer the cost of dams and ditches was prohibitive.”); *Id.* at 228.

132. *Id.* at 638.

133. 43 U.S.C. §§ 321-339 (repealed 1976).

134. Gates, *supra* n. 85, at 639.

135. Gates, *supra* n. 85, at 401.

136. *Id.* at 401, 642. See Worster, *supra* n. 130, at 156 (“Simply handing a settler, or purported settler, a square mile of desert with the requirement that he bring water to it, as the Desert Land Act did, was a snare and a delusion.”)

137. *Id.*

138. See *id.* at 639-41. See Reisner, *supra* n. 111, at 45 (“As for the Desert Land Act and the Timber and Stone Act, they could not have promoted land monopoly and corruption more efficiently if they had been expressly designed for that purpose.”)

139. *Id.* at 516 - 517.

Act of 1916—allowing the entry of 640 acres designated as valuable for grazing.¹⁴⁰ Settlers were required to invest at least \$1.25/acre in permanent improvements, such as fencing, in exchange for a patent to the land.¹⁴¹ Fifty million acres were entered under the law, though over half that much was eventually abandoned.¹⁴² Again, while the act achieved its goal of land disposals, it too was plagued by speculators and fraud. Settlers making an honest attempt at stock-raising were often forced give up the land or sell to large ranch holdings, as 640 acres proved too little for a viable business operation.¹⁴³ It also broke up what had once been open range and contributed significantly to its deterioration through over-grazing on the eve of the Dust Bowl and Great Depression era.¹⁴⁴

B. Grants to Railroads – Building a Transcontinental Infrastructure

The United States heavily invested its public lands toward the construction of railroads.¹⁴⁵ Originally, Congress had merely granted rights-of-way to railroads. By the middle of the 19th century it was apparent that the cost of building a transcontinental railroad system would require the railroad companies to raise substantially more capital than the private markets were prepared to contribute. The government would need to do more to capitalize the effort to tie the nation's coasts together. The solution of the day was to provide free land to the railroads, though opponents voiced concern over the massive quantities of land that would be removed from the public domain and made unavailable for homesteading.¹⁴⁶

Between 1862 and 1871, the government promised between 100 million and 110 million acres of public lands to the transcontinental railroads directly to be sold to finance construction of the railroads.¹⁴⁷

140. 43 U.S.C. § 291-301 (repealed 1976).

141. Gates, *supra* n. 85, at 517.

142. *Id.* at 528-29.

143. *Id.* at 519-21.

144. *Id.* at 521-22.

145. *See id.* at 341-56 (Before the large land grants to support the construction of railroads, the United States experimented in land grants to support the building of roads, bridges, and canals in the Ohio territories and beyond).

146. *Id.* at 360-61.

147. *Id.* at 377. Reisner, *supra* n. 111, at 39 (“To call it a bonanza is to understate the matter significantly. The railroad land grants were a gift the size of California plus the major part of Montana”).

Generally, the odd numbered sections of land in a band as wide as forty miles along the railroad corridor were granted, resulting in a checkerboard land ownership pattern with even numbered sections held by the government and odd numbered sections granted to the railroads.¹⁴⁸ Where land within the railroad grant area had already been settled or was promised to the states, the railroads were permitted to select other in lieu lands.¹⁴⁹ The primary limitation on the railroad's selection was that no mineral lands could be selected.¹⁵⁰

The area of land granted to the railroads varied by grant, and over time, with earlier grants being generally narrower than later grants, and more land being made available for those portions of the railroad corridor that would be more difficult and costly to construct.¹⁵¹ In addition to land grants, the railroads also received favorable federal loans, with a first mortgage to the United States, and thirty-year government bonds for each mile of railroad constructed, with the loan and bond amount to depend on the difficulty and cost of construction.¹⁵²

Railroad land grants worked. Transcontinental railroads were built. Construction of the railroads encouraged continued immigration and settlement, including establishment of many "railroad towns" to support construction along their routes.¹⁵³ The railroads also facilitated western tourism and were integral to establishment of major national parks.¹⁵⁴

For all their successes, the railroad grants also gave rise to a number of difficulties. While the railroads were required to sell their land grants to settlers within a certain time period—generally three years—or the lands would revert to federal ownership, the railroads often delayed sale by postponing required surveys.¹⁵⁵ The railroads also found creative ways to "dispose" of lands by mortgaging them to affiliates and thus avoided returning much of the land to the federal government or selling the land at reasonable prices to interested settlers.¹⁵⁶ In other instances, railroads were given the right to select lands from areas not along the

148. Coggins, *supra* n. 94, at 91.

149. Gates, *supra* n. 85 at 364.

150. *Id.*

151. *Id.* at 362-86.

152. *Id.*

153. Coggins, *supra* n. 94, at 92.

154. *Id.*

155. Gates, *supra* n. 85, at 365-66.

156. *Id.*

railroad corridor, putting areas off limits to settlement that received none of the benefits of the railroad's construction. Large areas of land were withdrawn that were neither settled nor returned to the government as railroads delayed in selecting lands to avoid tax payments.¹⁵⁷

Western public and political sentiment, which had at first clamored for railroad grants, turned sour as westerners came to view the railroad companies monopolistic land barons with too much control of too much western land.¹⁵⁸ Railroad companies were criticized for holding prime land and selling only at high prices, even after the railroads had been financed and constructed.¹⁵⁹ One commentator has described the railroads as "corporate throwback[s] to colonial proprietors."¹⁶⁰ The checkerboard pattern of land ownership has created great practical and land management challenges for government and private landowners.

The legacy of railroad grants is a mixed one. Successful in tying together the nation's transportation and commerce, railroad grants created contemporary obstacles for competing settlers and land users, and modern difficulties for federal land managers and private owners of checkerboard sections.

C. *The Reclamation Act – Federal Support for Irrigated Farming*

The Desert Land Act had opened larger parcels of arid lands to entry, but it did not achieve its goal of encouraging western farmers to develop private irrigation systems to make the lands productive for farming. By the 1880s, it became apparent that government support would be necessary to construct large-scale water diversion and storage infrastructure if much of the arid west was to be settled.

157. *Id.* at 366-67.

158. *Id.* at 454-56; 379-81. Reisner, *supra* n. 111 at 39 ("The deeded lands usually paralleled the railroad's track; reproduced on maps, they resembled jet streams flowing in reverse. Anyone who bought land from the railroads would be utterly dependent on them for getting his harvests to eastern markets and receiving supplies in return. When the time came to set rates, the railroads could charge pretty much what they pleased").

159. Gates, *supra* n. 85, at 396 (Up to 127 million acres of lands within 50 miles of the railroads was closed to homesteading as a result of the railroad grants).

160. Sheldon, *supra* n. 96, at 10.

In 1888, Congress funded an irrigation survey to identify reservoir sites throughout the West. Congress withdrew dam sites from entry,¹⁶¹ but the survey activity resulted in a rush of land claims by speculators intent on seizing the lands that would be made most productive through irrigation projects.¹⁶² In 1894, under the Carey Act,¹⁶³ Congress offered the western states up to a million acres of federal land if they would develop irrigation projects to make those lands productive within 10 years. A million acres were patented under the Carey Act, mostly in Idaho and Wyoming, but the act did not result in the wide-scale irrigation projects envisioned by Congress.¹⁶⁴

Finally, in 1902, after much lobbying by irrigation and settlement proponents, Congress resolved to directly fund irrigation projects under the Reclamation Act, using revenues derived from sale of public lands.¹⁶⁵ Congress gave the Bureau of Reclamation authority under the Reclamation Act to reserve dam sites from the public domain.¹⁶⁶ Opponents, generally from the eastern states, argued that the program was socialistic and an unwarranted use of federal funds and an unfair western hoarding of public land revenues.¹⁶⁷ They also feared competition from millions of acres of newly irrigated farmlands.¹⁶⁸

By 1906, projects had begun in fifteen states to irrigate 2.5 million acres.¹⁶⁹ The original intent of the Reclamation Act was that the government would put up the capital to begin large-scale irrigation projects, sale of irrigated lands would finance the projects, and water users would repay the construction costs over time, as well as pay the cost for maintenance of the facilities. Unfortunately, in most cases, land sales and water user fees were not sufficient to repay construction costs, or at least

161. Thomas H. Pacheco, *Indian Bedlands Claims: A Need to Clear the Waters*, 15 Harv. Envt. L. Rev. 1, 16 (1991); *see also* Utah Div. of State Lands v. U.S., 482 U.S. 193, 199-200 (1987) (discussing history of 1888 act and reservation of dam sites).

162. Gates, *supra* n. 85, at 661-62.

163. 43 U.S.C. §§ 641-48.

164. Gates, *supra* n. 85, at 647-50.

165. 43 U.S.C. §§ 391-404; *see also* Gates, *supra* n. 85, at 655.

166. Gates, *supra* n. 85, at 655; Paul Smyth, *Conservation and Preservation of Federal Public Resources: A History*, 17 Fall Nat. Res. & Envt. 77, 78 (2002).

167. Gates, *supra* n. 85 at 652-53; *See* Resiner, *supra* n. 111; Worster, *supra* n. 130, at 160

168. Gates, *supra* n. 85 at 652-653; . *See* Reisner, *supra* n. 111, at 114-115.

169. Gates, *supra* n. 85, at 658 - 659.

not in the timeframe set by Congress.¹⁷⁰ Extensions and debt forgiveness were common.¹⁷¹

Other unforeseen costs of massive dam building and water diversion efforts would take longer to recognize, most significant among them the environmental cost borne by fish and wildlife and those dependent on them.¹⁷² The appearance of abundant water encouraged growth that itself had negative impacts on desert lands and habitats. The economic development induced by Reclamation Act irrigation projects may be sorely tested as rainfall and runoff patterns change with the climate.¹⁷³

The financial shortcomings and environmental impacts of the Reclamation Act tarnish, but do not negate, the fact that the Act was largely successful in its original purpose of supporting the construction and operation of hundreds of water projects across the West that are still used today by farmers, ranchers, and communities for irrigation, flood control, industrial and municipal water supply, and power generation.¹⁷⁴ The Reclamation Act was also instrumental in the creation of many western communities.¹⁷⁵ Cheap hydropower and water security were responsible, in no small part, for the expansion of agriculture, growth of the industrial sector, and burgeoning western communities along western rivers.¹⁷⁶

D. Hydropower Development and Licensing

The turn of the 20th century brought with it a new interest in development of hydroelectric development, propelled by technological advancement that made electric power transmission of 100 miles or more

170. *Id.* at 655, 663-75.

171. *Id.* at 686-88.

172. *See, e.g.,* Reisner, *supra* n. 111 ; Michael C. Blumm, *Dam Removal in the Pacific Northwest: Lessons for the Nation*, 42 *Envlt. L.* 1043, 1045-46 (2012); Getches, *supra* n. 95, at 5-6 (highlighting the environmental and social costs of large dams); *see generally* Wilkinson, *supra* n. 111 , at ch. 5 (“The River was Crowded with Salmon”).

173. David Getches, *supra* n. 95, at 10-11; Wilkinson, *supra* n. 96, at 303.

174. Getches at 2-3.

175. *Id.* at 2-3.

176. Gates, *supra* n. 85, at 692; David Getches, *supra* n. 95, at 5-6.

from dam sites possible.¹⁷⁷ During the push to construct dams under the Reclamation Act of 1902, little thought was given to the use of dam sites to generate electric power.¹⁷⁸ Hydropower was a secondary value, helpful to pay the costs of project development that were not being borne by the farmers using irrigation water.¹⁷⁹ Early power plants were constructed to convey irrigated water to users in the valleys, with the excess sold to communities for municipal and industrial uses.¹⁸⁰ In time, the economic value of hydropower became a dominant purpose of federal dam development, resulting in projects such as Hoover Dam, Grand Coulee Dam, and many others.¹⁸¹

The value of public lands for hydropower projects generated fierce debate between private interests and those who favored public use of the resource. In 1920, Congress enacted the Federal Water Power Act, which created the Federal Power Commission (FPC) (later the Federal Energy Regulatory Commission).¹⁸² The Commission was given power to license private hydropower developments on all navigable waters across the country, including on federal lands, subject to payment of rental fees to the government for use of underlying public lands.¹⁸³ Congress permitted the FPC to grant hydropower licenses for fifty years, responding to pressure from developers to allow a lengthy period to recover investment costs via power sales.¹⁸⁴

177. Charles K. McFarland, *The Federal Government and Water Power, 1901-1913: A Legislative Study in the Nascence of Regulation*, 42 *Land Economics* 441, 441 (1966).

178. Gates, *supra* n. 85, at 659.

179. *Id.*

180. *Id.* at 660.

181. *Id.* at 685-890 (The eventual cost of constructing the Hoover Dam would exceed all prior reclamation projects undertaken across the West. Similar projects, though not as grand in scale, would be hastened by the Public Works funds expended during the depression era).

182. 16 U.S.C. §§ 791-828.

183. *Id.* at § 797(f).

184. *Id.* at § 799.

E. *The General Mining Law of 1872 – Encouraging Development of Mineral Resources*

In 1872, Congress passed the General Mining Law,¹⁸⁵ which generously offered to any industrious individual a land patent at \$2.50 or \$5/acre for the discovery and development of valuable mineral deposits.¹⁸⁶ The General Mining Law continued the United States policy of “free mining” set out in the Mining Act of 1866, which permitted discovery and patent of lode claims, and the Placer Act of 1870, which did the same for placer claims.¹⁸⁷ The passage of both preceding laws was controversial for permitting miners to gain ownership of valuable mineral lands free of charge.¹⁸⁸ Supporters argued, however, that the laws were necessary to resolve title disputes and encourage investment in mining.¹⁸⁹

The General Mining Law of 1872 made numerous substantive changes to the earlier laws, but was enacted with little fanfare.¹⁹⁰ Mining claims were limited to 20 acres, though a single miner could hold as many claims as desired, so long as each included discovery of a valuable deposit.¹⁹¹ Even if a miner never took the land to patent, a miner with a valid claim had the exclusive right to develop and sell the minerals without royalty to the government.¹⁹² When originally enacted, the General Mining Law applied to all minerals other than coal, which was already subject to auction and public sale. In 1920, the Mineral Leasing Act removed oil and gas from the mining law and made it subject to lease.¹⁹³ Common variety minerals, such as sand and gravel, were removed from the application of the mining law in 1955.¹⁹⁴

There are approximately 1.1 million hardrock mining claims on 25 million acres of western public lands.¹⁹⁵ The law, to this day, permits the

185. 30 U.S.C. § 22.

186. Charles Davis, *American Federal Lands and Environmental Politics: Politics as Usual or a New Ball Game?* 19 Pub. Land & Res. L. Rev. 5, 7 (1998).

187. GATES, *supra* n. 85, at 719-23.

188. *Id.*

189. *Id.*

190. *Id.* at 723.

191. *Id.* at 77.

192. Charles Davis, *American Federal Lands and Environmental Politics: Politics as Usual or a New Ball Game?* 19 Pub. Land & Res. L. Rev. 5, 7 (1998).

193. Mineral Leasing Act, 30 U.S.C. §§ 181, *et seq.*

194. Common Varieties Act, 30 U.S.C. § 611.

195. Wilkinson, *supra* n. 96, at 20, 33.

discovery and extraction of hard rock minerals, precious metals, and gems from the public lands without royalties to the federal government. The law is distinctly controversial among public land laws, with ardent champions and detractors. The latter argue the law is an unwarranted giveaway to the mining industry, which has paid nothing to the government for the right to exploit public mineral reserves for over a century.¹⁹⁶ Critics point to environmental impacts caused by mining, such as toxic tailings, and acid mine drainage.¹⁹⁷

The mining law's backers argue that it supported development of the nation's industrial sector and economy for decades, and provides an essential incentive for the exploration of mineral deposits, a business fraught with risk.¹⁹⁸ Miners relying on the law discovered (and continue to develop) some of the most valuable mineral deposits in the world. The lure of gold and other precious metals was a major factor in drawing settlers west and led to the establishment of countless western communities. Environmental controls and practices have substantially reduced the industry's impacts on air, land and water, while providing metals key to advanced technology, including copper and other minerals used in renewable energy devices.¹⁹⁹

F. Federal Investments Encouraging Private Development

In tandem with the public land development laws discussed above, the United States has historically spent public money to make public resources easier to develop and more profitable to the private sector. The examples offer a mix of lessons. The United States Forest Service long

196. See Sheldon, *supra* n. 96, at 16; Bob Ekey, *The New World Agreement: A Call for Reform of the 1872 Mining Law*, 18 Pub. Land & Res. L. Rev. 151, 160-63 (1997); John D. Leshy, *Reforming the Mining Law: Problems and Prospects*, 9 Pub. Land L. Rev. 1 (1988).

197. Davis, *supra* n.157, at 28 (addressing early environmental degradation and discussing the environmental laws of the modern era, including the Clean Air Act, Clean Water Act, Superfund, Endangered Species Act, and others, which have together required the mining industry to clean up its act); Wilkinson, *supra* n. 96, at 31-32, 49-50.

198. See generally Andrew P. Morris, et al., *Homesteading Rock: A Defense of Free Access Under the General Mining Law of 1872*, 34 *Envtl. L.* 745 (2004).

199. Copper Development Association, Inc., "Renewables" (<http://www.copper.org/environment/sustainable-energy/renewables/homepage.html>).

provided incentives to the timber industry by funding logging roads—often at considerable expense to the American taxpayer.²⁰⁰ Public lands timber harvesting created western jobs, sustained communities, and got forest products to markets, but certain logging practices are tied to a host of environmental problems and land-use conflicts in the forests.²⁰¹

A different example is the United States' investment in electric transmission. From 1937 to 1977, the United States created the four Power Marketing Administrations ("PMAs"),²⁰² each now under the umbrella of the DOE, and each responsible for marketing power from United States Army Corps of Engineers and Bureau of Reclamation hydroelectric dams for a different region of the country.²⁰³ The PMAs have historically sold power to public entity customers for the express purpose of encouraging regional economic development.²⁰⁴ The PMAs invested in the construction of thousands of miles of electric transmission

200. Robert E. Wolf, *National Forest Timber Sales and the Legacy of Gifford Pinchot: Managing a Forest and Making it Pay*, 60 U. Colo. L. Rev. 1037 (1989) (detailing history of the Forest Service's operations in the red. The road subsidies have drawn extensive criticism). See Harold J. Krent and Nicholas S. Zeppos, *Monitoring Government Disposition of Assets: Fashioning Regulatory Substitutes for Market Controls*, 52 Vand. L. Rev. 1705, 1741 n.176 (1999) (listing articles and writings critical of Forest Service road-building subsidies for the timber industry). Douglas A. Kysar, *Law, Environment, and Vision*, 97 Nw. U. L. Rev. 675, 706 (2003) (One critic noted that the government spent \$389 million between 1982 and 1988 on roads and other assistance to logging companies in Alaska's Tongass National Forest, but received only \$32 million in return). Jan G. Laitos and Thomas A. Carr, *The Transformation of Public Lands*, 26 Ecology L.Q. 140, 168 (1999) (The White House Council of Economic Advisors reported that in 1995 the Forest Service collected \$616 million in timber sales, but spent more than \$850 million on timber management, including construction and maintenance of logging roads).

201. Zygmunt J.B. Plater, *Environmental Law and Three Economies: Navigating a Sprawling Field of Study, Practice, and Societal Governance in Which Everything is Connected to Everything Else*, 23 Harv. Envtl. L. Rev. 359, 380-81 (1999).

202. Congressional Research Services, Report for Congress, *Power Marketing Administrations: Proposals for Market-Based Rates*, at CRS-1 n.1 (Mar. 11, 2005) (available at http://assets.opencrs.com/rpts/RL32798_20050311.pdf) (the four PMAs are the Bonneville Power Administration, the Southeastern Power Administration, the Southwestern Power Administration, and the Western Area Power Administration) [hereinafter Power Marketing Administrations].

203. L. Clifford Adams, Jr., et al., *Federal Electric Preference Power Marketing in the 1980's—Developing Legal Trends*, 4 Energy L.J. 1, 4-5 (1983).

204. Power Marketing Administrations, *supra* n. 166, at summary.

connecting hydropower and other projects throughout the country to market centers.²⁰⁵

Finally, the United States has invested directly in other infrastructure projects across the country, including construction of piers, jetties, dredging, and other measures to modify coastal areas for the benefit of shipping.²⁰⁶ The public investment supports maritime trade, but also serves key national interests in transportation and national defense.²⁰⁷

The public lands disposal and development policies of the 19th and early 20th centuries amounted in many ways to trial and error on the grandest of scales. The policies of the day were built on the idea that public lands and their wealth belonged to the people and should be used to build the country. While critics have blasted the disposal programs and other public land laws as having facilitated the “private exploitation of public resources,”²⁰⁸ at the expense of the environment,²⁰⁹ Indian tribes,²¹⁰ and fiscal prudence, the various initiatives succeeded in using the public lands to support development that the country wanted. National policy was served by trading public resources for private action seen to benefit the country.

IV. BORROWING FROM PAST EXPERIENCE: APPLYING LESSONS LEARNED FROM HISTORICAL PUBLIC LAND LAWS TO PROMOTION OF OCEAN WIND

Ocean wind development is stepping onto a stage largely set for a different play. No law yet answers the question whether ocean wind

205. See, e.g., Power Marketing Administrations (available at <http://www.allgov.com/departments/departments-of-energy/power-marketing-administrations?agencyid=7424>) (accessed April 17, 2013) (detailing assets of the four PMAs).

206. Corps of Engineers Dredging Policies, American Association of Port Authorities, *Corps of Engineers Dredging Policies* (available at <http://www.aapa-ports.org/Issues/content.cfm?ItemNumber=1096>) (accessed April 17, 2013).

207. *Id.*

208. See, e.g., Sheldon, *supra* n. 96, at 16; see also Eric T. Freyfogle, *Goodbye to the Public-Private Divide*, 36 *Envtl. L. J.* 7, 12 (2006) (describing the “coercive” side of private property ownership in contrast to public ownership and management of shared resources).

209. See, e.g., Charles Davis, *American Federal Lands and Environmental Politics: Politics as Usual or a New Ball Game?* 19 *Pub. Land & Res. L. Rev.* 5 (1998).

210. See, e.g., Sheldon, *supra* n. 96, at 12-13.

energy deserves to be governed differently from how we have chosen to drill for oil or conserve whales. The latest executive branch statement on national ocean policy barely mentions renewable energy, though the President has otherwise made renewable energy development a key feature of his Administration. So far, the idea of ocean wind development is being treated as if it were essentially the same kind of policy problem that the country has figured out how to handle under earlier laws.

Should we govern ocean wind development as if it is just another royalty source or piece of industrial hardware out in the water? Or should we govern ocean wind as urgently needed national energy infrastructure that is essential to supply massive amounts of carbon-free electricity to the power grid? Is ocean wind to be thought of as if it were a pier, jetty, oil well, or pipeline—or is it something quite different, and more important?

When United States policymakers decide that the public lands hold things urgently needed by the country, they generally write laws that make it easy for citizens (and difficult for foreign interests) to use that thing in a way that benefits the country, and earns a profit. Later, when policymakers become aware that citizens are overusing or abusing the resource in a way that hurts the country, they write laws that make it harder to do the harmful thing. In between the “yin and yang” of action and reaction, policymakers rely on process-oriented laws empowering resource managers to mediate among competing interests involved with particular sites, projects, or resources. For better or worse, it is generally what we do.

Is the need to bring large amounts of wind energy onto the power grid urgent enough today, or in a near tomorrow, that ocean wind farms should be governed as if they were this era’s gold mine, homestead, railroad, oil field, or dam site? If we think that development of ocean wind resources may be as important to the country as dam projects were in the early 20th century, or as vital as establishment of the transcontinental rail network was in the 19th century, how should we govern ocean wind development? If we are tempted to entertain the thought that the country will need to act aggressively to develop its ocean wind resource in the immediate future, do we have examples from our own experience that suggest the kind of law-making that policymakers should be considering?

How much risk are we willing to take with the public’s ocean resources in order to reduce risk to the atmosphere? How soon do we need to decide? Our history of public land management does not resolve these contemporary policy questions, and nothing is likely to happen until

some consensus forms around the answers. The trajectory of climate-related news and science suggests the country will need to decide soon, and that the scale of any meaningful response will need to be big. The success of ocean wind development in other countries, and the industry's early steps in the United States, each offer encouragement that a very large industry can be created here, given the right conditions.

Our history suggests some features of lawmaking that have worked in the past to achieve national resource development objectives. Where we have succeeded most broadly, we have created private wealth from public resources. We have transferred enough of the wealth-making potential of public resources to private hands to stimulate investment by private actors. Sometimes the public has augmented the value of the land itself with direct investment, for example, with the Reclamation Act projects. As Charles Wilkinson noted in his seminal work on natural resource and public land policy, *Crossing the Next Meridian*:

Many of those policies had enormously beneficial effects for the nation, or at least for the vastly larger non-Indian population. The homesteading program, with all of its abuses, is justly acclaimed as one of the most progressive land distribution policies ever undertaken by any nation. The almost incomprehensibly large subsidies to railroads may well have been excessive, but it is hard to deny that some extraordinary public incentive was required to achieve the widely held objective of connecting the coasts. Much the same is true with many of the early large-scale reclamation projects. Federal capital was necessary if the West was to be opened for the small family farm.²¹¹

In some cases, the country fully privatized resources that had been public. Railroad land grants, homesteads, and mine sites were conveyed in full to private hands—in exchange for investments of time, labor, and money by private parties. Each of these sets of transactions had problems, including fraud and unaddressed environmental and social externalities. But the nation got its railroads, settlements, and minerals. In other cases, property interests were not transferred in fee, but changed hands

211. Wilkinson, *supra* n. 96, at 19.

undercontracts or permits that amounted to nearly the same thing and achieved equivalent results, as with the fifty year terms for federally licensed hydropower.

A. If Current Incentives Are Not Enough

The policy dialogue to-date about promoting ocean wind energy has found grudging agreement on use of tax policy to create financial incentives, and marginal adaptations of the pre-existing seabed mineral leasing regime. Proposals to create green energy mandates for electric utilities have found no lasting traction in Congress. The nation's fiscal situation is not friendly to proposals for spending a lot more money to stimulate the industry. The debate so far does not give consideration to use of the seabed as an asset to be traded for development of a new, immense, carbon-free energy resource.

United States marine policy is not, at present, helpful. In the last decade, two highly respected national commissions explored ocean policy priorities and options for the United States. The reports of the Pew Commission on Ocean Policy in 2003²¹² and the U.S. Commission on Oceans Policy in 2004²¹³ each focused on ways to strengthen the quality of ocean governance for the benefit of the nation's economy and environment. Each noted that climate change added risk to ocean ecosystems, but neither gave more than passing consideration to ocean wind energy. In fact, little more was said other than the U.S. Commission's suggestion that the federal government create a renewable energy leasing system that extracts a fair return for the taxpayer.²¹⁴ The two reports' near indifference to ocean wind reflects the nascent state of the technology, as well as the condition of the public policy debate on climate and energy only ten years ago. It was a different era, a time when ocean wind technology was a far off notion, climate and energy policy were being set by the Bush Administration, and nobody would have thought to consider seriously whether ownership of the underwater public domain should be reconsidered as an urgently needed step to stimulate renewable energy development. Six years later, however, when President

212. Pew Commission on Ocean Policy, *America's Living Oceans: Charting a Course for Sea Change* (2003).

213. U.S. Commission on Ocean Policy, *An Ocean Blueprint for the 21st Century*, Final Report (Washington, D.C. 2004).

214. *Id.* at 102-103.

Obama issued an Executive Order establishing a national ocean policy, marine renewables received little specific attention, and only as another potential future use to be reconciled with all others.²¹⁵

Even today, with ocean wind technology maturing rapidly, billions invested in projects off other countries' shores, and an Administration eager to act to promote renewable energy and combat climate change, the question appears not to have received any serious exploration by policymakers. Why not? Is there no conceivable way that the ownership value of public land under the sea could be transferred in sufficient quantity from the federal government to wind project developers to stimulate large investments in ocean wind projects?

B. Thinking Differently about Doing the Right Thing

Intuitively, one knows that the objections to transferring ownership of seabeds will be numerous and strong. Most will start from the assumption that, since oceans have always been public, any degree of "privatization" is somehow illegitimate by definition. Convention and continuity have stabilizing value in society, and novelty, as such, is not an adequate basis for lawmaking. But the status quo deserves a good airing-out if the climate change-related risks forecast by most scientists are indeed coming to roost in the United States and around the globe.

C. Does Changing Ownership Really Mean Reducing Environmental Protection?

Some may take the ideological view that the ocean is no place for new, large-scale energy development. Other objections will arise from the concern that environmental values of marine areas will be jeopardized by *any* change in policy that might weaken federal regulatory control over development. But a better perspective is that some places offshore are more suitable to renewable energy development than others, and particularly at a time when most scientists and many government and private sector leaders believe the global environment is at risk, we should work very hard to find those suitable places and use them.

The current Administration has only just begun to implement some of the marine resource protection and management programs

215. Exec. Order. No. 13,547 (July 19, 2010).

recommended by the oceans commissions and its own task force.²¹⁶ Those recommendations were prompted by deep concern over degradation of marine resources. Proposals for “privatization” have gained a bad reputation among those in the conservation community, and elsewhere, who see them as reflections not of legitimate policy, but only as manifestations of certain private sector actors’ appetite to cast off federal rules protecting the environment or taxpayer.

The United States has struggled mightily to protect its ocean environment. It would be wrong to decide to abandon the oceans to save the atmosphere (as if the fate of one were not inextricable from the other), but fortunately that is not the choice. Ocean wind development does not have to occur everywhere offshore, and wind development does not have to be unrestrained by environmental standards.

Some marine areas should be off limits, including key habitats for marine wildlife. Other areas may be too sensitive as a matter of aesthetics. But the oceans off our beaches are very big places. Large areas of seabed are over the horizon (beyond the view of parks or anyone’s vacation home), and they are probably not central to reproductive success of whales, fish, seabirds or other marine life, or otherwise essential to maintain in their current state. Ocean wind energy projects are “development” in undeveloped areas, but it is likely that some characteristics of wind projects will have positive direct consequences for marine ecosystems, such as providing cover for juvenile fish or structure for growth of beneficial marine plants.²¹⁷

The “marine spatial planning” required under the Administration’s oceans policy should help identify the areas offshore most suitable for wind development.²¹⁸ The Administration’s efforts to identify Wind Energy Areas is a solid step in that direction, a sensible way to distinguish between sites to be developed and those to be left alone. The

216. See generally Council on Environmental Quality, National Ocean Policy Implementation Plan (April 2013), (available at http://www.whitehouse.gov/sites/default/files/national_ocean_policy_implementation_plan.pdf).

217. Ocean Energy Council, *Offshore Wind Energy*, <http://www.oceanenergycouncil.com/index.php/Offshore-Wind/Offshore-Wind-Energy.html> (accessed March 10, 2013).

218. See Phil Taylor, Interior Offshore Wind Leasing Program Seen as ‘Test Case’ for Marine Spatial Planning, *NYTimes.com* (June 23, 2011), <http://www.nytimes.com/gwire/2011/06/23/23greenwire-interior-offshore-wind-leasing-program-seen-as-16182.html>.

environmental reviews contemplated by Interior Department's current leasing program should help characterize the potential impacts from wind farms within selected areas.²¹⁹

There is no conclusive answer today to the question whether any existing environmental rules should change to promote ocean wind. It is not entirely unreasonable for some to fear that if those rules, or the government's ability to apply them, change, environmental harm will follow. Similarly, those on the development side would be reasonable to wish for the easiest regulatory path forward. Environmental standards and procedures are critical variables in the formula for ocean wind energy development, but there are no ocean wind projects in our waters, no empirical test of the law's adequacy, and nothing to use to argue conclusively that specific changes in the law, or its application, are essential to the expansion of the technology.

D. Does Congress Have the Power to Innovate?

The Property Clause of the United States Constitution gives Congress broad, nearly limitless power over federal property, including the public lands, by authorizing Congress to "dispose of and make all needful rules and regulations respecting the territory or other property belonging to the United States."²²⁰ In 1976, the Supreme Court described Congress's power over the public domain as "without limitations."²²¹ As one leading commentator described it, the immense power handed to Congress under the Property Clause has given "political forces free rein to adjust national policies to accommodate the vast social and economic changes that have occurred since the United States was established."²²² Since the founding of the nation, that policy has shifted from early acquisition, to disposal during the era of westward expansion, to retention and management in the early 20th century, and finally come to give

219. See, e.g., DOI, Commercial Wind Lease Issuance and Site Assessment Activities on the Atlantic Outer Continental Shelf Offshore Massachusetts: Environmental Assessment (Oct. 2012) (*available at* http://www.boem.gov/uploadedFiles/BOEM/BOEM_Newsroom/Library/Publications/2012/BOEM-2012-087.pdf).

220. U.S. Const., art. IV, § 3, cl. 2.

221. *Kleppe v. New Mexico*, 426 U.S. 529, 539 (1976).

222. John D. Leshy, *A Property Clause for the Twenty-First Century*, 75 U. of Colo. L. Rev. 1101, 1102 (2004).

greater emphasis to environmental conservation and public involvement in decision-making.²²³

Property rights, whether owned privately or publicly, can be conceptualized, as any first-year law student has learned, as sticks in a bundle, an assembly of individual and separable parts.²²⁴ Rights of a property owner within the bundle of sticks may include, among other things, the right to sell or give away, right of possession, right of use, right to manage, right to the income from the property (i.e., to lease or sell the profits), right to the capital, right to security, and right to the prohibition of harmful use.²²⁵ Rights within the bundle of sticks can be parsed out and sold, leased, given away, or managed separately.²²⁶

In the early 19th century and during the beginning of the land disposal era, the United States did not manage its property interest in the public lands as a “bundle of sticks” that could be separated. Early homestead laws and railroad grants, for example, gave away the entire plot of land and all the attendant rights. Later laws reserved certain rights to the government; for example, the Stock-Raising Homestead Act of 1916, reserved ownership of the subsurface mineral estate.²²⁷

In the modern era of public lands governance, the full panoply of ownership rights deserve consideration as potential bargaining chips to trade as incentives for ocean wind development. Transfer of federal ownership in the seabeds is not an all-or-nothing proposition. Indeed, the traditional oil and gas leasing framework currently applied to ocean wind conveys a limited use-right for the ocean floor. But other sticks in the ownership bundle may provide as much or better incentives to private developers.

E. Can We Use Ownership as the Carrot to Drive the Horse?

If United States policymakers wish to tap the property value of the submerged public lands to stimulate ocean wind, what choices are

223. Sheldon, *supra* n. 96, at 6-16.

224. James R. Rasband and Megan E. Garrett, *A New Era in Public Land Policy? The Shift Toward Reacquisition of Land and Natural Resources*, 53 Rocky Mtn. Min. L. Inst. § 11.09[1] (2007).

225. *Id.* n.156 (citing A.M. Honore, “Ownership,” in *Oxford Essays in Jurisprudence* 107, 113 (A.G. Guest ed., 1961).

226. *Id.*

227. Sheldon, *supra* n. 96, at 6-7.

available? Policymakers could turn fully to historic precedent and consider complete transfer of ownership, conversion of public land fully to private hands, as happened with homesteads and railroads. The Property Clause of the Constitution is certainly that broad. However, for the purpose of this analysis, we have assumed that more limited proposals merit consideration first.

1. Royalties and Fees

To begin, the United States could, at least for a time and in certain areas, drop the stick in the traditional landlord's property rights bundle that expects royalty payments or other use-right or administrative fees from renewable energy generating "tenants." Fiscal hawks on Capitol Hill and in the Office of Management and Budget surely would object to the potential loss of federal revenues, but right now, and for years to come—without changes—there will be no revenues of any size from ocean wind development. The section of the 2005 Energy Policy Act that authorized OCS leasing for renewable energy requires DOI to collect "fair returns" for the United States. DOI has opted to collect fees and royalties based in part on the competitive prices of other grid supplies, which reflects fairness in one sense.²²⁸ But royalty payments and fees are unquestionably an impediment to development of the new industry, which could help the nation greatly trim its greenhouse gas emissions and reduce the risks of climate change. Fairness has a different aspect seen from this different, intergenerational perspective. The degree of impediment will vary with the price of competitive energy options onshore, and other factors affecting project finances, but fees and royalties inherently make ocean wind more expensive, less competitive, and less attractive to investors. Whatever theoretical importance ocean wind royalty collections may have as a federal fiscal prerogative, their actual function today is to frustrate a top policy objective of the same sovereign.

The United States could transfer the royalty-collection right to wind project developers themselves, who, perhaps in return for developing a certain quantity of ocean wind power, would receive the right to collect royalties from other seabed uses in particular sites. Similarly, the United States could grant exclusive rights to ocean wind developers to develop and earn revenue from other features of the ocean energy system,

228. See 73 Fed. Reg. 39,376, 39,380 (July 9, 2008).

including transmission and communications. Developers of key transmission assets, too, might be offered lease, or revenue collection rights, or both.

2. *Financing*

In tandem with other measures, the United States could agree to allow an ocean wind developer to encumber the project-related seabed with debt, to pledge the seabed as an asset, while agreeing to subordinate any federal claim to that asset. It is not at all clear what value the private market might place on any area of seabed, or whether private markets would treat the public seabed as an asset, but the United States has a considerable degree of faith in private markets to find value in an immense array of situations. It would seem reasonable to consider how the markets might respond now and over time if the seabed could be pledged as an asset.

3. *Shifting Management Responsibility*

One can imagine alternative governance bodies—perhaps marine development cooperatives—where federal ownership and resource management prerogatives would be transferred to government chartered corporations or other quasi-governmental entities charged with promoting and managing the suite of energy and other resource uses in a given marine area. Alaska native corporations and, in some ways, the federal power marketing administrations such as the Bonneville Power Administration and Tennessee Valley Authority, fit within this concept.

States could be placed in the same roles envisioned here for private sector developers. In many ways, the hand-off of ownership prerogatives from the federal government to states might be simpler. Most examples of successful investment in energy generation and transmission lie with the private sector, or with the federal government itself (i.e., federal hydropower projects), and not with the states. That said, the coastal states include many with aggressive renewable energy policies and sophisticated technology sectors. Some states, such as Massachusetts, Rhode Island, Maryland, Delaware, and Virginia have taken steps to promote wind in state waters. Why couldn't any of those states or California or Oregon or Hawaii or others step into the shoes of the federal government to carry ocean wind development forward?

These suggestions would shift ownership prerogatives from the federal government to others to promote development. These ideas are, in some respects, comparable to, though less extreme than, the railroad land grant policies of the 19th century and homestead laws. They need not stand alone, of course. A glance back at the federal reclamation program and national forest management provides examples of federal investment in capital projects leveraging substantial value onto private land and economic activity. Federal dams and canals leveraged farms and towns. Federal roads leveraged the forest products industry. Federally generated electricity and federally built transmission leveraged electrification of rural and other areas. This era of sequestration and tight budgets is not encouraging to consideration of new federal expenditures, but the United States' own experience shows how federal expenditures on infrastructure can stimulate development deemed to be a public priority, including, potentially, ocean wind.

Alongside these suggestions, an ocean wind promoter would almost certainly wish to add a call to maintain the various tax incentives enacted in recent years. Others would emphasize measures to lower regulatory hurdles to siting, including, particularly, the multi-layered environmental review process set by DOI under NEPA.²²⁹

V. CONCLUSION

Federal lawmaking is usually an inefficient and difficult process, rarely more so than now. The difficulties seem particularly acute in relation to proposals to legislate on climate or energy policy. Anyone watching Capitol Hill today will see little encouragement that the

229. See generally National Environmental Conflict Resolution Advisory Committee, *Final Report* (April 2005) (available at http://www.ecr.gov/pdf/NECRAC_Report.pdf) (On the latter notion, one would be well advised to consider that public support and public participation are often mutually dependent in our democracy. The many adverse experiences from earlier public lands and natural resource development policies helped lead to inclusion of the NEPA process into government decision-making. The NEPA process, handled strategically as an investment by thoughtful developers taking the long view, can be a powerful strategic risk minimization and asset enhancement tool; it is not inherently a barrier to development. The 2005 Report of the National Environmental Conflict Resolution Advisory Committee to the U.S. Institute for Environmental Conflict Resolution (a program of the congressionally chartered Morris K. and Stuart L. Udall Foundation) explores the strategic use of NEPA to prevent disputes over natural resource development, and to resolve those that do arise).

Republican-led House of Representatives and the Democratic-led Senate will find common ground to do anything on those two issues in the near future.

An optimist would, however, note that the Republican and Democratic party platforms from the 2012 presidential election can be juxtaposed in a way that suggests an area of possible agreement. Both platforms acknowledge the importance of the United States' natural resources,²³⁰ and both agree that the country should develop renewable energy. The Republicans' platform calls for policies aimed "at energy security to ensure an affordable, stable, and reliable energy supply for all parts of the country" and Democrats urge promotion of "smart policies that lead to greater growth in clean energy generation and result in a range of economic and social benefits."²³¹

The Republican platform "encourage[s] the cost-effective development of renewable energy."²³² It promotes a "pathway toward a market-based approach for renewable energy sources" and one that "aggressively develop[s] alternative sources for electricity generation such as wind."²³³ However, it does so with the caveat that "the taxpayers should not serve as venture capitalists for risky endeavors."²³⁴ The party instead believes that the "role of public officials must be to encourage responsible development across the board."²³⁵ The party would "let the free market and public's preferences determine the industry outcomes."²³⁶

230. Republican National Committee, 2012 Republican Platform 15 (2012) (available at <http://www.gop.com/wp-content/uploads/2012/08/2012GOPPlatform.pdf>) [hereinafter Republican Platform] (For example, the Republican platform states that "[t]he United States and its neighbors to the North and South have been blessed with abundant energy resources, tapped and untapped, traditional and alternative, that are among the largest and most valuable on earth."). Democratic National Committee, Moving America Forward: 2012 Democratic National Platform 20 (2012), (available at <http://www.democrats.org/democratic-national-platform>) [hereinafter Democratic Platform] (Similarly, the Democratic party is "committed to protecting our natural resources while creating jobs, preserving habitats, and ensuring that future generations can enjoy our nation's outdoor heritage.").

231. Republican Platform at 15; Democratic Platform at 20.

232. Republican Platform at 16.

233. *Id.*

234. *Id.*

235. Republican Platform at 15.

236. *Id.*

The Democratic platform does not endorse privatizing natural resource development, but strongly endorses the need to address global climate change.²³⁷ The Democrats “commit to significantly reducing the pollution that causes climate change.”²³⁸

These are thin reeds, to be sure. Party platforms do not guarantee policy initiatives. But if the goal of incentivizing ocean wind energy could be served by reducing the hurdle represented by federal ownership, would that not seem to resonate with each party’s view of good policy?

Our goal for this article has been to suggest a different and supplemental way to think about ocean wind development policy. We believe that the United States’ experience setting lands policy aimed at achieving major national goals is a useful lens through which to consider the country’s options for promoting ocean wind. United States policymakers achieved big things for the benefit of the country by transferring public land ownership. If the President, his chief economic advisors, the overwhelming majority of climate scientists, and many others are right about climate change risks, now would seem to be a time to at least begin a discussion about the full array of alternatives for using the wealth represented by the submerged public lands as an inducement to large scale investment in ocean wind energy.

237. Democratic Platform at 20.

238. *Id.*