

# CLE READING MATERIALS

## Coal Royalties: Historical Uses and Justifications

FOR

2:40 p.m. – 4:00 p.m.

**EMERGING ISSUES IN NATURAL RESOURCES POLICY**

- **Nada Culver**, Senior Counsel and Director, The Wilderness Society's BLM Action Center
- **David J. Hayes**, Executive Director, State Energy and Environmental Impact Center at NYU Law; former Deputy Secretary of the Interior
- **Brenda Mallory**, Executive Director and Senior Counsel, Conservation Litigation Project; former General Counsel for the White House Council on Environmental Quality
- Moderator: **Jayni Hein**, Policy Director, Institute for Policy Integrity

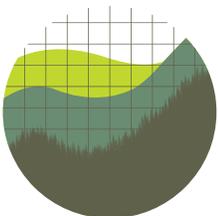
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# Coal Royalties

*Historical Uses and Justifications*



Institute for  
Policy Integrity

NEW YORK UNIVERSITY SCHOOL OF LAW

September 2016  
Jayni Foley Hein  
Caroline Cecot

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Institute for Policy Integrity  
New York University School of Law  
Wilf Hall, 139 MacDougal Street  
New York, New York 10012

Jayni Foley Hein is the Policy Director at the Institute for Policy Integrity at NYU School of Law. Caroline Cecot is the 2016-2017 Legal Fellow at the Institute for Policy Integrity and Affiliate Faculty at George Mason School of Law. The authors wish to thank Richard Revesz, Peter Howard, and Jason Schwartz for their comments, and Katherine Rouse and Sara Savarani for excellent research assistance.

This report does not necessarily reflect the views of NYU School of Law or George Mason School of Law, if any.

# Executive Summary

**O**n January 15, 2016, the Department of the Interior (Interior) announced that it would begin a comprehensive review to identify and evaluate potential reforms to the federal coal program. This review will be conducted as a Programmatic Environmental Impact Statement (Programmatic EIS) that will analyze issues including “how, when, and where to lease; how to account for the environmental and public health impacts of federal coal production; and how to ensure American taxpayers are earning a fair return for the use of their public resources.”<sup>1</sup> This report explores the argument for increasing federal coal royalty rates by considering the historical meaning of royalties, the economic justifications for royalties, the legislative history of the implementation of a federal royalty, and some of the considerations that private landowners have relied upon in setting royalties. The report also considers justifications for royalties in other contexts, such as intellectual property.

While royalties typically have a revenue or profit sharing component, a common thread in our research that may be especially relevant to Interior is that royalties have historically been used as a policy lever, to help set national, state, or private priorities for how land, resources, or property should be used. For example, royalties have been set at specific rates in order to: encourage resource production; encourage westward expansion; maintain the incentive to create new inventions; and deter socially undesirable behavior, to name just a few. In line with this finding, this report concludes that it would be reasonable for Interior to adjust coal royalty rates to account for negative externalities that are not otherwise addressed by regulation.



*Jacobs Ranch Mine complex. Photo © Doc Searls*

The report begins with a review of the common law origins of royalties for mineral resource extraction. Royalties were paid to the sovereign or to other private landowners in order to share the value of the resource and for the privilege of mining on the property. Next, in Part II we discuss the economic justifications for royalties, including as the owner's share of differential returns on mines given their superior productivity (economic rent); as payments to the owner for minerals removed (user cost); and as the sum of the former plus compensation for negative externalities from the extraction or use of minerals.

In Part III we review the legislative history of mineral resource extraction law and policy in the United States. Leasing policies and royalty rates have consistently been used as policy levers to advance the national interest and to compensate the public for the removal of mineral resources. Beginning in the 20th century, legislative history also reveals growing attention to the relationship between fossil fuel royalty rates and externalities, as shown through state revenue sharing arrangements, the Land and Water Conservation Fund, and recent calls for hardrock mining reform.

In Part IV we briefly examine how private royalty rates and mineral resource leases are influenced by diverse factors, including expected economic rent, characteristics of the resource, competition for the lease, and externalities that may affect the leaseholder, such as noise and pollution. Finally, in Part V we examine how royalties are set and applied in contexts outside of natural resources, including intellectual property. In both the patent and copyright fields, royalty determinations are influenced by the specific characteristics of the property at issue; moreover, federal law and policy in these fields has sought to reconcile competing interests and provide proper incentives to intellectual property holders and property users.

Overall, the historical and economic justifications for royalties would support Interior exercising its existing statutory discretion to raise coal royalty rates to account for factors such as negative externalities, including those resulting from carbon and methane emissions, in order to align the federal coal program with other national priorities, such as meeting climate change goals and commitments.

# I. Royalties at Common Law

English common law origins of the word royalty and concepts of ownership played a role in the formation of U.S. common law.<sup>2</sup> As early as 1400 the term “royalty” was used by the British Crown to describe any “right or privilege retained by the crown.”<sup>3</sup> It became associated with mineral rights in particular by 1580, when the British Crown retained title to all land and the right to take any gold or silver discovered on land conveyed.<sup>4</sup> By 1829, the term royalty specifically meant a right retained by a landowner under a lease in return for the privilege of working a mine.<sup>5</sup>

Although a royalty may be viewed as a type of rent, at common law it was viewed more as the actual portion of minerals due the crown at the mine in return for the privilege of extraction.<sup>6</sup> For “royal mines” the royalty was paid to the sovereign, whereas for other mines it was paid to the landowner for “the privilege of working the property.”<sup>7</sup>

As the common law developed, the King of England maintained exclusive ownership over all silver and gold discovered (called the “regalian right”). In contrast, royalties taken on other minerals functioned as a “rent or tax” or were sold fee simple, depending on local customs.<sup>8</sup> For example, in the tin mines of Cornwall, the right to work was given to all “free tinners” so long as a portion of all minerals extracted were transferred back to the owner, usually about 1/15th of the product. Mining of lead mines of Derbyshire was made contingent on returning 1/13th of the minerals extracted to the crown or the land’s lessee.

Outside of England, the early concept of a “royal fifth” (quinto real or quinto del rey in Spanish and Portuguese) reserved to the monarch 20 percent of all precious metals and other commodities extracted by mining, acquired by his or her subjects as war loot, or found as treasure. The “royal fifth” was instituted in Medieval Muslim states, Christian Iberian kingdoms (including Spain and Portugal) and their overseas colonial empires during the age of exploration.<sup>9</sup> In 1783, King Charles III of Spain dictated the Mining Ordinances for New Spain whereby a “fifth part” of the value of all minerals produced from mines located in New Spain (much of present-day Central and South America) was reserved to the crown.<sup>10</sup>

Early mineral royalties in the United States typically consisted of 1/8th of production (or 12.5 percent), a figure likely taken from the early Pennsylvania salt industry.<sup>11</sup> The 1/8th figure was so common in the 1920s and 1930s that Texas courts took judicial notice of it in mineral leasing litigation.<sup>12</sup> That said, there is evidence of early use of higher royalties such as 1/6th of production.<sup>13</sup> In Part III we discuss the legislative history of mineral resource royalties in the United States, which sheds more light on the factors that lawmakers and the public considered when setting minimum royalty rates. First, we explore the economic justifications for natural resource royalties.

## II. Economic Justifications

In general, economists have justified mineral royalty payments as the owner's share of differential returns on certain mines given their superior productivity (economic rent) or as payments to the owner for minerals removed (user cost). Increasingly, economists have considered the relevance of negative externalities from the extraction or use of minerals in the calculation of socially optimal royalty rates. This Part describes this economic literature.

### Royalty as Economic Rent

The concept of economic rent has been used as a justification for royalty payments.<sup>14</sup> Economic rent (also referred to as the Ricardian rent) is a payment to the owner of a factor of production that exceeds the amount necessary to keep the factor in its current employment.<sup>15</sup> David Ricardo first explored the idea of an agricultural land rent equal to the advantage of using a tract of land in its most productive use relative to the advantage of using the marginal tract (or, the best rent-free tract) for the same purpose.<sup>16</sup> In other words, land rent is the payment to the owners of especially fertile land in return for the production advantage (or cost savings) associated with using that land.

Just as agricultural land varies in its fertility, mineral mines vary in their production costs due to deposit quality and proximity to markets, and for this reason, some mines may earn economic rent. For example, a coal mine on land with superior coal deposits (say, thicker deposit seams located closer to the surface) will be able to produce coal at lower cost than will a mine on land with inferior coal deposits (such as narrow deposit seams located at great depth).<sup>17</sup> Similarly, a mine located near an industrial or shipping center will have lower production costs than a mine located farther away and subject to higher transportation charges.<sup>18</sup> The owners of superior mines earning economic rent will be able to charge higher royalties. These royalties tend to be seen as equitable, enabling the mineral owner to share in the economic rent arising from the mineral's superior quality.<sup>19</sup> Unlike other forms of taxation, royalties imposed on economic rent also would, in principle, not distort behavior.<sup>20</sup> Of course, if the private costs of production do not fully account for the social costs of production and no corrective policy measures are taken, then the resulting level of production would not be socially optimal. In such a case, even if royalties capture more than the economic rent and thereby reduce production, the "distortion" in behavior would actually result in a production level closer to the socially optimal level.<sup>21</sup>

There is evidence that U.S. royalties might have historically been directed, at least in part, at capturing economic rents.<sup>22</sup> John Orchard, in his analysis of the history of mineral rents, argued that in the United States, royalties were "partly compensation for the mineral removed and partly surplus or economic rent arising through superiority of some mines over others."<sup>23</sup> He quoted the secretary of the American Institute of Mining Engineers explaining the U.S. royalty rates in 1889 as follows: "With us the royalty always settles itself according to special advantages. The lowest royalty is the royalty that must be paid, or else the landowner would not care to let the mine be worked. On top of that, you have all those higher royalties coming in to represent special natural advantages."<sup>24</sup> He also quoted a Birmingham mining engineer as stating in 1919 that "strictly speaking, royalties are partly rent or income, and partly capitalization of assets."<sup>25</sup>

Orchard also examined early royalty rates and found that they tended to be higher when economic rents were likely to be higher—that is, when the costs of extraction were low due to the coal's "accessibility, quantity, thickness, depth, value, and other conditions that affect the cost of its extraction."<sup>26</sup> For example, Kentucky in 1910 had a royalty of 8 cents per ton on coal from 3 to 4 feet thick seams, 10 cents on coal from 4 to 5 feet thick seams, and 12 cents on coal from 5

to 6 feet thick seams.<sup>27</sup> Orchard also noted that the U.S. Geological Survey, in its 1910 classification and valuation of government coal lands, placed a significantly higher value on lands less than 15 miles from a completed railroad.<sup>28</sup> These U.S. practices, according to Orchard, were consistent with practices in other European countries at the time.<sup>29</sup>

The concern about the “special advantages” of certain mines was also evident in the testimony before Congress prior to the adoption of Federal Coal Leasing Amendments Act of 1976. The concern apparently motivated the lower royalty rate on coal produced from underground mines, which were thought to be more costly to operate. Legislative history is discussed more thoroughly in the next Part.

The discussion of economic rent typically does not involve discussion of externalities. But it is easy to imagine that a “special advantage” of a mine might include its low environmental externalities. Such a mine should be able to earn economic rent that the public, in turn, can capture through the royalty rate. Mines that generate high environmental externalities might earn no economic rent or become unprofitable to operate at all. In such a case, the mineral owner may prefer for the mineral to stay undeveloped, a concept discussed in the next Section.

## Royalty as User Cost (or Compensation for Liquidated Wealth)

Unlike the agricultural land on which Ricardo based his theory of economic rent, coal is a nonrenewable resource. Its supply is exhausted in the long run, at which point economic rent becomes zero. Because of the unique characteristics of nonrenewable resources, some economists have distinguished between royalties on nonrenewable resources and rents, influenced by the work of Harold Hotelling.<sup>30</sup> In 1931, partly in response to the conservation movement, Hotelling developed a model of the optimal rate of extraction of a nonrenewable resource over time.<sup>31</sup> According to Hotelling, profit-maximizing competitive firms will extract a mineral resource until the market price of the resource equals the production costs of the last unit plus a cost equal to the net present value of the forgone future profits had the resource remained in the ground (in other words, the cost of not being able to use the resource in the future). This latter cost is now referred to as the Hotelling rent or user cost.



*Abandoned Mine Lands in Pitkin County, CO. Photo © U.S. Geological Survey*

Economist Alfred Marshall explained that, conceptually, a royalty is akin to the user cost because it compensates the owner of the mineral for the reduced opportunity to produce the mineral in the future.<sup>32</sup> A tax on the user cost, unlike a tax on economic rent, would distort firm behavior because it would incentivize a firm to leave mineral resources in the ground for the future.<sup>33</sup> Hotelling’s model implies that the optimal royalty schedule must induce the mining firm to exhaust the mine in such a way that marginal net benefits grow over time at the rate of discount.<sup>34</sup>

Under this framework, the government would be justified in collecting a high royalty if the stock of the mineral were limited even if there were no economic rents.<sup>35</sup> On the flip side, if the stock of the mineral were large relative to anticipated demand, the royalty would be lower.<sup>36</sup> Arguing in favor of this aspect of a royalty, Orchard explains that the owner of a currently unprofitable coal deposit, one that does not earn economic rent, would not allow any mining without compensation, as he would “gain[] nothing” and “lose[] an asset that may bring in an income for himself or his heirs with a change in market conditions.”<sup>37</sup> The owner would demand payment equal to the marginal or minimum royalty necessary to compensate the owner for his loss even in the absence of economic rent.<sup>38</sup>

Despite its intuitive appeal, however, there is little evidence that user costs were a significant component of historical royalty rates for coal in the United States. This is largely because the supply of coal has not been perceived to be scarce, implying user costs close to zero,<sup>39</sup> though economic theory predicts an increasing royalty rate over time as the resource becomes scarce.

Nonetheless, the concept of user costs has historically been relevant as a justification for royalty rates in the United States. U.S. mining operators and policymakers were aware of the user cost when determining and evaluating possible royalty rates. Both American mining operators quoted by Orchard referred to user costs—or, in their words, the part of the royalty “that must be paid, or else the landowner would not care to let the mine be worked,” or the part that essentially represented the “capitalization of assets.”<sup>40</sup> And, in congressional hearings on the Federal Coal Leasing Amendments Act of 1976, there was concern that “it may not be desirable to encourage underground mining [via a lower royalty rate] until technology has evolved which will allow a higher percentage of recovery be underground mining,” which is really a concern about future less costly mine productivity forgone by present mining.<sup>41</sup> Such a concern, in turn, can be analogized to concern about costly externalities caused by coal production. The landowner receives a royalty payment from coal production, but the landowner’s total benefit is reduced by the environmental damage to his land from the production. Such a landowner may prefer to wait to extract the coal when technology evolves that makes coal production less environmentally costly. When the government is the land and mineral owner, such concerns about the net social costs of production become even more relevant, as discussed in the next Section.

## Royalties and Externalities

The concepts of economic rent and user cost roughly suggest that maximum net benefits would accrue to the public when the government directs royalties at capturing all economic rent and at compensating the public for the user cost. But when resource extraction produces environmental and other costs to social welfare, unless corrective measures are taken, the level and rate of exploitation of the resources will be higher than socially optimal.<sup>42</sup> The concepts of economic rent and user cost do not directly address what the government should do in the face of such externalities. Nonetheless, economics provides a framework for thinking through this complex issue.

As the White House Council for Economic Advisors recently explained, ensuring the optimal extraction of mineral resources on public land is akin to solving a principal-agent problem: the government (the principal) directs a coal firm

(the agent) to efficiently extract the coal and return economic profits to the government.<sup>43</sup> When the government is the mineral owner, its objective should be to develop the resource in such a way as to generate maximum net benefits to the public.<sup>44</sup> In the best-case scenario, the government would itself efficiently extract the coal using the lowest-cost approaches at the optimal rate, taking into account both direct and external costs of production, and keep economic rents and user costs for taxpayers. To address negative externalities, the government as operator may have chosen to forego development of the resource—or chosen to extract less coal. But in reality, the government does not extract the resources for itself and instead relies on the coal firm to do so.<sup>45</sup>

Thus, a royalty payment, by also targeting the residual negative externalities not addressed by other policies (such as direct regulation limiting greenhouse gas emissions from coal mines), would in theory allow to the public to enjoy maximum net benefits from extraction by forcing the coal firm to internalize negative externalities and align its incentives with those of the government.<sup>46</sup> This justification for a royalty is implicit in Orchard's characterization of the minimum royalty as the landowner's compensation for otherwise uncompensated environmental externalities of mining such as "the marring of the beauty of the locality with an ugly mine mouth, a black coal tippie, or a dump heap."<sup>47</sup> The association of royalty payments with payments for residual environmental costs is also implicit in the fact that about half of the federal government's revenues from royalty payments are returned to the states where mining occurs.<sup>48</sup> The implication of this revenue-sharing policy is discussed in more detail in the next Part.

The idea that the royalty can help align producer incentives with those of the government and potentially address externalities is not new. For example, the existence of positive externalities such as "the stimulation of an infant industry and the development of mineral resources" was used as a "principal rationale" for imposing no royalties on the discovery and extraction of certain minerals in 1872.<sup>49</sup> Historically, the fact that "[o]il and gas operations have minimal effect on surface use compared to coal operations which are usually highly disruptive to the surface" has been offered as a relevant difference between oil-and-gas extraction and coal that justifies different royalty rates.<sup>50</sup> The legislative history for Federal Coal Leasing Amendments Act of 1976 also indicates that U.S. policymakers were aware that "[o]ne manner by which [more costly] underground mining can be encouraged is by the use of a lower royalty rate on coal mined by underground methods."<sup>51</sup> More recently, Radford Schantz, Jr., a member of a 1993 task force assembled by Interior for the economic analysis of royalty proposals, recalled that compensation for environmental impacts in particular was a justification offered for a royalty at the time.<sup>52</sup> In fact, according to him, an initial proposal for dealing with pollution from abandoned mines involved using revenue from royalty payments, "underscoring the environmental aspect of the royalty."<sup>53</sup> There is also evidence outside of the United States of governments using royalties to motivate changes in firm behavior. For example, in 1987 New Zealand introduced royalty payments to help reduce geothermal extraction from the Rotorua geothermal field.<sup>54</sup>

Regarding the environmental justification in particular, however, economists often emphasize that, from the point of view of economic efficiency, direct economic instruments (such as a specific price or quantity condition on pollutants from mining activities) may be better suited to control environmental externalities, as these instruments could be directed at specific environmental problems and pollutants.<sup>55</sup> Much of this concern is motivated by the idea that many environmental externalities produce site-specific damages,<sup>56</sup> though notably, this concern is absent in the context of externalities from global pollutants like carbon and methane. In any event, it is undeniable that the financial and environmental purposes underlying royalty payments "are not really separate" because, as Schantz explains, "[w]hen correctly measured, the wealth embodied in in-ground minerals is an indicator of their social utility value" and "[a]s such, it ought to be net of the social costs of mining, including the value of environmental impacts."<sup>57</sup>

Thus, Schantz gives this justification an economic treatment when modeling the government's supply of a royalty.<sup>58</sup> In his model, the government landowner weighs the value of income from the sale against the value of what it gives away.<sup>59</sup> The government determines this latter value by evaluating: (1) opportunity cost, defined as the value of alternative uses of the land; (2) user cost; and (3) residual environmental impacts not mitigated by other laws or regulations.<sup>60</sup> These considerations form the minimum royalty that the government would accept at each site (comparable to Orchard's statement of the minimum royalty). The demand for leasing land for exploration and eventual mining, in turn, is determined by the prospector's assessment of the expected value of exploration at the site. Assuming competitive bidding for each site, the optimal royalty that emerges is equal to the supply price for the site (the opportunity cost, user cost, and environmental cost) plus, if applicable, a premium for economic rents at certain sites generated by competition among prospectors.<sup>61</sup> At the marginal site, this premium would be zero, and the royalty would equal the supply price.<sup>62</sup>

Economists have modeled the effect of various forms of royalty and taxes in bringing production closer to the socially optimum level and rate, but many of the effects are ultimately dependent on the type of assessment scheme chosen for the royalty.<sup>63</sup> In general, however, royalties take the form of *ad valorem* taxes, that is, taxes on the amount or value or the resource.<sup>64</sup> Although an analysis of the optimal form of a royalty is beyond the scope of this report, we note that there is a robust literature in economics about setting an optimal *ad valorem* tax in the context of externalities.<sup>65</sup> For example, economist Evan F. Koenig has argued that *ad valorem* taxes combined with specific taxes are a viable policy option that may outperform other regulation in appropriately accounting for externalities given uncertainty under certain conditions.<sup>66</sup>

### III. Legislative History

Legislative history concerning coal and other mineral resource extraction and leasing demonstrates that leasing policies and royalty rates have consistently been used as policy levers to encourage development when deemed necessary for the advancement of the national interest and to compensate the public for the removal and value of mineral resources. Congress has repeatedly made policy judgments with respect to the value of mineral resources; the desirability of promoting the development of a particular type of resource; and, beginning in the 20th century, the best way to allocate revenue from resource extraction to the public and communities affected by resource development. In addition, Congress has vested the Secretary of the Interior with broad authority to set royalty rates and manage the federal coal program in order to best serve the national interest.

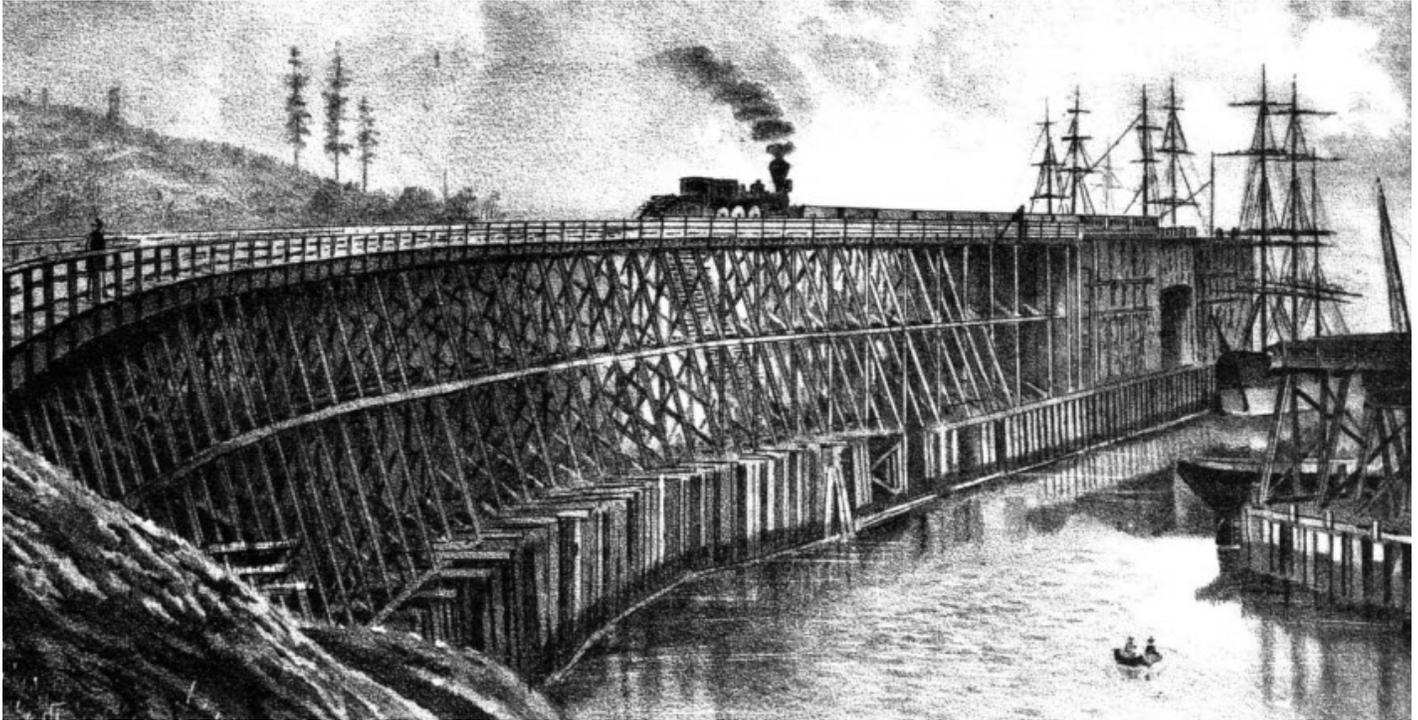
One of the earliest records of the United States' contemplation of mineral rights appears in the provisions for the sale of land by the government in the Northwest Territory in the Land Ordinance of May 20, 1787, which provided that "there shall be reserved . . . one-third part of all gold, silver, lead, and copper mines, to be sold, or otherwise disposed of as Congress shall hereafter direct."<sup>67</sup> The provision was, however, not adopted by the Constitutional Convention.

As the settlement of the United States expanded westward, the general policy of public land management was to convey lands to private ownership as quickly as possible, to encourage settlement, farming, and mining.<sup>68</sup> The gold rush of 1848 prompted the consideration of mineral resource legislation by Congress in 1849 and 1850, but Congress failed to take any action to control western mineral resources.<sup>69</sup>

Starting in the second half of the 19th century, Congress began to treat coal differently from other minerals, as its value as an energy source became clear. In 1864 and again in 1873, Congress enacted Coal Lands Acts authorizing private purchase in fee simple<sup>70</sup> of lands classified by Interior as valuable for coal; those statutes set a maximum limit of 160 acres on individual entry and minimum prices of \$10 to \$20 per acre.<sup>71</sup> Congress enacted the General Mining Law of 1872 to address other minerals; that statute authorized the sale of public lands in fee simple to mining claimants at rates of \$2.50 to \$5.00 per acre.<sup>72</sup> The Coal Lands Acts and General Mining Act of 1872 helped open the West by allowing individuals to obtain exclusive rights to mine billions of dollars worth of gold, silver, coal, and other hardrock minerals from federal lands without having to pay a federal royalty.<sup>73</sup>

At the turn of the 20th century, concerns arose about the price, supply, and control of coal, and Congress began to discuss ways to retain federal control of mineral resources.<sup>74</sup> Congress passed the Coal Lands Act of 1909,<sup>75</sup> which authorized the issuance of patents to "[a]ny person who has in good faith located, selected, or entered under the nonmineral land laws of the United States any lands which subsequently are classified, claimed, or reported as being valuable for coal," upon proof of compliance with those land laws.<sup>76</sup> The Act, however, mandated that the patent "shall contain a reservation to the United States of all coal in said lands, and the right to prospect for, mine, and remove the same."<sup>77</sup> Thus, the statute aimed to reconcile the twin goals of the federal government to settle the West and to retain federal ownership of valuable mineral resources.

Legislative history leading up to the passage of the Mineral Leasing Act of 1920 reveals the desire among members of Congress to retain public ownership of mineral resources.<sup>78</sup> Royalty rates were described as a way to "assure the Government an adequate return from lessees,"<sup>79</sup> and represented the way in which "the community shares in the element of value."<sup>80</sup>



*Tacoma Coal Bunkers. Courtesy of Washington State Library*

Some representatives from states with federal land within their borders expressed concern that “the communities in which these great resources lie would not obtain any considerable part of the cream of the values taken from them in the way of royalty.”<sup>81</sup> This concern has persisted today, in calls for a greater portion of royalties to be returned to states in which minerals lie or to coastal states near offshore mineral tracts. (See discussion later in this Section.) Other members of Congress were apprehensive about the broad grant of authority to Interior in the draft bill that would become the Mineral Leasing Act, stating that “the Secretary of the Interior is given practically unlimited authority as to the granting and the terms and conditions of leases. One will search the bill in vain to find any provision in it which insures to anyone under any circumstances the unquestioned right to make a lease.”<sup>82</sup>

The Mineral Leasing Act of 1920 provides for the disposition of reserved minerals, including coal, oil, and natural gas, on federal lands subject to enumerated lease terms and payments. The Act sets a minimum royalty rate for “the privileges of mining or extracting the coal in the lands covered by the lease” payable to the United States of “not less than 5 cents per ton of two thousand pounds.”<sup>83</sup> The Mineral Leasing Act also states that the Secretary of the Interior can include coal, oil, or natural gas lease terms that she or he deems necessary “to insure the sale of the production of such leased lands to the United States and to the public at reasonable prices, for the protection of the interests of the United States, for the prevention of monopoly, and for the safeguarding of the public welfare.”<sup>84</sup> Royalties during this period were described as a way to “protect the Government in a declining market,” and were based on cents per ton (and varied with the quality of coal and associated difficulties of mining it); however, this method changed to “a percentage of value royalty” in the late 1960s.<sup>85</sup>

In 1970, the congressionally established bipartisan Public Land Law Review Commission recommended that all federal lands be retained in federal ownership unless disposal to private parties would achieve a greater benefit and provide equitable compensation if the use is interrupted. In establishing guidelines for public land management, the Commission stated, “[t]he end result, of course, is to achieve the maximum benefit for the general public . . . .”<sup>86</sup> In addition to emphasizing federal control, Congressional testimony leading up to the passage of the Federal Land Policy

and Management Act in 1976 reveals support for revenue-sharing provisions that would direct a portion of the revenue from fossil fuel production to the states where the production occurs in order to “help county government[s] cope with energy development impact problems.”<sup>87</sup>

The Federal Land Policy and Management Act requires that the United States “receive fair market value of the use of the public lands and their resources unless otherwise provided for by statute.”<sup>88</sup> The Federal Coal Leasing Amendments Act of 1976 likewise specifies that no bid may be accepted which is less than “the fair market value, as determined by the Secretary, of the coal subject to the lease.”<sup>89</sup> The term “fair market value” is not defined in either statute. In 1982—the last time that Interior convened a working group to comprehensively review its fair market value procedures—the task force determined that “fair market value” was not merely the value of the resource discovered or produced, but the value of “the right” to explore and, if there is a discovery, to develop and produce the energy resource.<sup>90</sup> Indeed, the Federal Land Policy and Management Act refers to the value of using the lands, and not solely to the value of the resources.

The final version of the Federal Coal Leasing Amendments Act of 1976 states: “A lease shall require payment of a royalty in such amounts as the Secretary shall determine of not less than 12½ per centum of the value of coal as defined by regulations, except the Secretary may determine a lesser amount in the case of coal recovered by underground mining operations.”<sup>91</sup> According to one hearing statement, “[t]he overall objective [of the royalty] is to get a fair market value for the Federal resources back into the Federal Treasury.”<sup>92</sup>

In 1982, Interior set the royalty rate for underground coal mining at not less than 8 percent of the value of the coal removed from the lease; in 1990 it changed the rate to a flat 8 percent.<sup>93</sup> The main reason provided in the legislative history for giving Interior discretion to treat royalty rates for surface mining and underground mining differently was the perceived additional cost and difficulty of underground mining and the lower sale price of deep-mined coal.<sup>94</sup> According to the hearings, “[y]ou could certainly logically expect to have much less [sic] amounts bid in a competitive sale for deep coal if you had the same royalty for surface coal and deep coal.”<sup>95</sup>

Central to the question of how royalties interact with externalities, the legislative history of the Federal Coal Leasing Amendments Act of 1976 also reflects a concern that states be paid a greater share of federal coal royalties to account for social and environmental externalities. In considering the bill, which would direct an additional 12.5 percent of royalty revenues to states with federal leases within their borders (in addition to the 37.5 percent they already received at that time) the Committee on Interior and Insular Affairs stated, “The current restrictions on the manner in which monies return to the States from the sale of Federal leases within their borders are onerous. When an area is newly opened to large scale mining, local governmental entities must assume the responsibility of providing public services needed for new communities, including schools, roads, hospitals, sewers, police protection, and other public facilities, as well as adequate local planning for the development of the community.”<sup>96</sup> The legislative history also reflects concern as to “the waste of valuable resources, and the creation of severe environmental impacts.”<sup>97</sup>

The Federal Coal Leasing Amendments Act increased the state share of revenue from federal coal royalties, provided that the state share of revenue be used by “giving priority to those subdivisions of the State socially or economically impacted by development of minerals leased under this Act, for (i) planning, (ii) construction and maintenance of public facilities, and (iii) provision of public service . . .”<sup>98</sup> Thus, the Act directly links receipt of production revenues to compensation for the social and environmental costs of mineral production.

Furthermore, coastal states and their congressional representatives have repeatedly advocated for a greater share of offshore oil and natural gas revenue, due to significant impacts on coastal infrastructure and the environment.<sup>99</sup> According to coastal producing states, these revenues are needed to mitigate environmental impacts and to maintain the necessary support structure for the offshore oil and gas industry.<sup>100</sup> In addition, the Gulf of Mexico Energy Security Act of 2006 directs coastal states to use their share of royalty payments from offshore drilling for “the purposes of coastal protection, including conservation, coastal restoration, hurricane protection, and infrastructure directly affected by coastal wetland losses,” and “[m]itigation of damage to fish, wildlife, or natural resources,” among other delineated uses.<sup>101</sup> Moreover, the federal Land and Water Conservation Fund, since its establishment in 1965, has used federal oil and gas revenues to build and maintain public parks and protect open space and trails across the country.<sup>102</sup>

Of course, to the extent that states receive a greater proportion of the royalty as compensation for social, environmental, or economic impacts, less is left for the federal government unless the royalty rate is increased. There is no defensible reason for the federal government to receive a lower proportion of the royalty simply because some externalities are borne by the states. Instead, Interior should increase the royalty rate in order to shift more of the externality costs onto coal producers and arrive at a more socially optimal royalty rate.

Congressional efforts to modernize hardrock mining law also directly link royalties to compensation for negative externalities. No royalties are currently paid for hardrock mining on federal lands. The Hardrock Mining and Reclamation Act of 2007 would have imposed a royalty of 4 percent of gross revenues on existing mining from unpatented mining claims and placed an 8 percent royalty on new mining operations.<sup>103</sup> Seventy percent of the royalty money would have gone to a cleanup fund for past abandoned mining operations, and 30 percent to affected communities.<sup>104</sup> The Hardrock Mining and Reclamation Act of 2009 would have provided that the Secretary of the Interior establish a royalty rate of between 8 and 15 percent of the value of mineral production from any new mines on federal mineral lands, with royalties and reclamation taxes used to reclaim abandoned hardrock mines.<sup>105</sup>

Finally, the royalty rate for both surface and underground coal is lower than the royalty rate collected for other taxpayer-owned natural resources, such as offshore oil and gas, which generate royalties of 18.75 percent.<sup>106</sup> Interior raised the offshore oil and gas royalty rate in 2007 due to a number of factors, including increased oil and gas prices, technological improvements that made exploration and production more efficient, and the competitive market for leases.<sup>107</sup> Former Interior Secretary Ken Salazar said increasing the offshore rate was necessary to ensure that “the American taxpayer is getting a fair return for the oil and gas that the American people own”; he also pointed to higher state onshore rates for oil and gas as a possible justification to raise the onshore federal rate for oil and gas.<sup>108</sup>

In short, legislative history concerning coal and other mineral resource extraction demonstrates that leasing policies and royalty rates have consistently been used as policy levers to encourage development of particular minerals; to retain federal ownership of lands and resources; and to ensure adequate compensation to the public for the removal of mineral resources, in light of changing technology, environmental impacts, and market conditions. More broadly, Congress has sought to use royalty rates to advance the national interest, and has vested the Department of the Interior with discretion to manage the federal coal program in order to best serve the public interest.

## IV. Private Royalties

While less relevant to Interior, as a social decisionmaker acting on behalf of the U.S. public, private royalty rates and mineral resource leases are influenced by diverse factors, including expected economic rent, characteristics of the resource, competition for the lease, and externalities that may affect the leaseholder, such as noise and pollution.

### Negotiation of the Royalty Rate

The royalty rate for coal, oil, and gas production on private lands is variable, and depends on a number of different factors, including the expected rate of return for the extracted resource, the number of other producers offering leases in the area, and the number of other nearby mineral owners currently negotiating with a producer.<sup>109</sup>

The exact value of a royalty rate can be negotiated between parties, and the result depends highly on the negotiation power and skills of each party. The negotiation power, in turn, depends on how many acres of resource the mineral owner owns, how close the land is to “proven production,” and how many other companies are competing for the specific lease.<sup>110</sup> As expected, the owner of “a large tract next to a newly discovered field with numerous oil companies vying for the lease” would possess a significant amount of negotiation power<sup>111</sup> and could negotiate a high royalty rate for the lease. In the shale development context, however, there are also concerns that the oil and gas industry unfairly dominates negotiations.<sup>112</sup> In support of this view, economists Christopher Timmins and Ashley Vissing have found that demographic factors are also associated with negotiation power, with high-income mineral owners able to negotiate higher royalty rates.<sup>113</sup>

The way the resource is appraised can also influence the royalty rate, depending on whether it uses “market price” or “proceeds” or whether it includes an option to take royalties “in kind.”<sup>114</sup> The percentage of the royalty rate, being driven by market forces, is dependent on “what others in the area are willing to lease.”<sup>115</sup> Oil and coal leases tend to use “market price,” gas leases use “proceeds,” and mineral owners may receive their share “in kind.”<sup>116</sup> Sometimes, producers are able to deduct post-production expenses from the total royalty amount due to the mineral owner.<sup>117</sup>

In negotiating private leases, the parties often take into account pollution, surface disruptions, and other impacts. For example, mineral owners, in addition to negotiating the royalty rate, can negotiate lease clauses such as environmental clauses that encourage the use of safeguards to prevent contamination of soil and water and noise clauses that require the use of mufflers with loud equipment.<sup>118</sup> And in cases when mineral rights and surface rights are held separately (a split-estate), the surface owner can negotiate compensation for protection from “unreasonable encroachment and damage” to the surface.<sup>119</sup> One 1979 commentator urged that “[l]andowner-lessors should provide for escalating royalty payments according to the type of mining method used” to account for different waste production.<sup>120</sup>

Private royalty rates have also evolved with advances in technology that have made extraction more efficient, such as hydraulic fracturing. About 30 years ago, a typical oil and gas royalty rate for a private landowner was 12.5 percent; today, largely due to the growth of shale development, this negotiable rate has increased to an average of approximately 16 to

25 percent.<sup>121</sup> In the shale gas context, the new higher average royalty rate varies from state to state. By 2010, in West Virginia, the average royalty rate was between 16 to 18 percent;<sup>122</sup> in Pennsylvania, it was between 17 and 18 percent;<sup>123</sup> in Wyoming, it ranged from 12.5 to 20 percent;<sup>124</sup> and in Texas, it ranged from 18 to 28 percent, with an average of 25 percent.<sup>125</sup>

## Statutory Minimums for Private Royalties

Some states have enacted laws that guarantee a minimum royalty rate to private landowners, usually set at 12.5 percent, and regulate how companies calculate royalty payments.<sup>126</sup> West Virginia, for example, has a 12.5 percent minimum royalty rate guaranteed by statute.<sup>127</sup> Pennsylvania has had such a minimum royalty guaranteed by the “Guarantee of Minimum Royalties Act of 1979 for oil-and-gas development,”<sup>128</sup> though there have been recent proposals to change the way that royalties are calculated to ensure that the landowner receives the 12.5 percent minimum.<sup>129</sup> North Carolina also has a minimum royalty payment statute, which requires any lease or “any other conveyance of any kind separating rights to oil or gas from the freehold estate of surface property” to have a minimum royalty payment of 12.5 percent, which cannot be reduced by pre- or post-production costs.<sup>130</sup> Finally, Wyoming, Nevada, and Michigan all regulate post-production cost deductions. Wyoming passed the Royalty Payment Act of 1982, which prevents the “costs of production” from being deducted from a landowner’s royalty.<sup>131</sup> Nevada “excludes the costs of production from the landowner’s royalty,” which includes post-production costs.<sup>132</sup> Michigan only “allows a gas driller to deduct only two types of post-production costs: processing costs that enhance the value of the gas and transportation costs incurred after the point of entry into an independent pipeline system.”<sup>133</sup>

## V. Royalties in Other Contexts

Royalty rates play a critical role in multiple industries beyond mineral resource extraction. Within the intellectual property context, royalty rates are often used to compensate patent owners for the use of their patent, commonly orchestrated through licenses. To determine damages for patent infringement, courts assess several factors, including the value of the property the infringer has appropriated as well as the value he or she has gained from its use, to determine a “reasonable royalty” that forms the basis of damages owed to the patent holder. Royalties are also used in other contexts, such as the music industry, in order to balance competing interests between copyright holders and users.

Federal law and policy in these fields has sought to provide proper incentives to intellectual property holders and property users and reconcile competing interests. This is analogous to how royalty rates have evolved in the natural resources context, and is consistent with the recent calls to reform coal royalty rates in order to strike a more proper balance between coal development on the one hand, and conservation and mitigation of environmental damages on the other.

### Royalties in Patent Law and the Determination of “Reasonable Royalties” for Patent Infringement Damages

In the intellectual property context, royalty payments can be viewed as a profit-sharing mechanism. Patent holders have relatively broad authority to license a patent “for any royalty, or upon any condition” so long as that royalty or condition is reasonable.<sup>134</sup> In addition to being set reasonably, royalties must “be reasonably related to the licensee’s use of the patented invention.”<sup>135</sup> The setting of licensing royalties has not been without controversy. On the one hand, in *Brulotte v. Thys Co.*, the Supreme Court has held that “[a] patent empowers the owner to exact royalties as high as he can negotiate with the leverage of that monopoly.”<sup>136</sup> But on the other hand, courts have concluded that some royalty rates are too high. For example, in the late 1960s, the Seventh Circuit held that a royalty rate of 24 percent was “exorbitant and oppressive”



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in the context of the case—though the decision was later reversed and the rate ultimately upheld on a second appeal to the court.<sup>137</sup> Today, licensing royalty rates vary by patent and by industry. Below is a summary table demonstrating the range of royalty rates found in licensing agreements in various industries in the intellectual property context.<sup>138</sup>

Industry	Average	Median	Max	Min
Chemicals	4.8%	4.5%	25.0%	1.0%
Internet	13.5%	10.0%	80.0%	0.3%
Telecom	5.5%	4.9%	50.0%	0.4%
Consumer Goods	6.0%	5.0%	40.0%	0.1%
Media	12.7%	8.0%	70.0%	0.1%
Food processing	3.9%	3.0%	30.0%	0.3%
Medical/health	5.8%	5.0%	50.0%	0.1%
Pharmaceuticals/biotech	7.7%	5.0%	90.0%	0.0%
Energy	5.3%	4.6%	75.0%	0.1%
Machines/tools	5.3%	4.5%	25.0%	0.5%
Automotive	4.8%	4.0%	20.0%	0.5%
Electrical	4.4%	4.1%	20.0%	0.5%
Semiconductors	5.1%	4.0%	30.0%	0.0%
Computers	5.3%	4.0%	25.0%	0.2%
Software	11.6%	6.8%	77.0%	0.0%

In addition, average licensing royalty rates may be increasing over time. For example, researchers have assessed changes in royalty rates in the medical device, pharmaceutical and chemical industries and noted upward trends in the licensing royalties in these sectors from the late 1980s to mid-2000s: average royalty rates increased from 3.86 to 5.68 percent in the medical device industry and from 5.21 to 8.52 percent in the pharmaceutical industry.<sup>139</sup>

Royalty rates are also used in the intellectual property context to determine damages owed when an infringer uses a patent without license.<sup>140</sup> Damages may be determined, among other things, through expert testimony for “determination of damages or of what royalty would be reasonable under the circumstances.”<sup>141</sup> This “reasonable royalty” doctrine emerged in the early 20th century. Preliminary versions of the Patent Act, which was first passed in 1770, defined damages for infringement with little guidance.<sup>142</sup> In its 1915 decision in *Dowagiac Manufacturing Co. v. Minnesota Moline Plow Co.*, the U.S. Supreme Court sanctioned “a reasonable royalty” as an appropriate measure of infringement damages.<sup>143</sup> The Patent Act of 1922 first codified this “reasonability” concept by referring to the infringer’s liability as based on “a reasonable sum as profits or general damages.”<sup>144</sup> By 1946, the patent statute explicitly stated that “a reasonable royalty” was available to determine damages.<sup>145</sup> The current language directs courts to award “damages adequate to compensate for the infringement, but in no event less than a reasonable royalty.”<sup>146</sup>

Determining a “reasonable royalty” and overall damages, however, is not a simple task. The Federal Circuit, in addressing this issue, has ruled that “a reasonable royalty is the minimum permissible measure of damages for patent infringement,” or a floor, not ceiling for damages.<sup>147</sup> Courts have also emphasized the purpose of reasonable royalty-based damages in the patent infringement context, noting that “[t]he purpose of compensatory damages is not to punish the infringer

but to make the patentee whole.”<sup>148</sup> It used to be the case that, in calculating patent damages, courts used a “25 percent rule of thumb,” which set the royalty equal to 25 percent of the infringer’s profit from sales of the products embodying the licensed technology.<sup>149</sup> But in *Uniloc USA, Inc. v. Microsoft Corp.*, the Federal Circuit held that the 25 percent “rule of thumb” was “arbitrary,” “unreliable,” and a “fundamentally flawed tool for determining a baseline royalty rate in a hypothetical negotiation.”<sup>150</sup>

What remains is a list of fifteen factors, first outlined in *Georgia Pacific Corp. v. U.S. Plywood Corp.*, that courts consider to determine the reasonable royalty rate under the circumstances.<sup>151</sup> As the *Georgia-Pacific* factors demonstrate, the calculation of reasonable royalties is a complex and holistic analysis dependent on many factors relevant to the nature and characteristics of the property and patent at issue. The *Georgia Pacific* factors include: (1) whether the license is restricted or non-restricted with respect to whom the manufactured product may be sold; (2) the duration of the patent and the term of the license; (3) the established profitability of the product made under the patent and its current popularity; (4) the utility and advantages of the patent property over the old modes or devices, if any, that had been used for working out similar results; and (5) the effect of selling the patented specialty in promoting sales of other products of the licensee, and the value of the invention to the licensor as a generator of sales of his non-patented items. Many of these factors have analogues in the natural resources context, as the duration and terms of coal lease; whether the coal can be sold to any purchaser; the value and demand for the coal; and the environmental characteristics of the coal or coal tract (i.e., sulfur or other air pollutant content; anticipated remediation) all may influence the value of a coal lease.

The *Georgia-Pacific* reasonable royalty factors have been criticized as leading to uncertain, variable outcomes in patent litigation.<sup>152</sup> Still, the reasonable royalty concept embodies several broad principles about royalty determination and reveals the flexibility of quantifying royalties in intellectual property law. The patent context demonstrates that royalty determinations in this field tend to be flexible and determined by specific aspects of the property being used, while accounting for the value of the property at issue.

## Royalties in the Music Industry

Royalties are used extensively across the American music industry. The U.S. Constitution empowers Congress “[t]o promote the Progress of Science and useful Arts,” by providing artists and inventors with copyright and patent protection.<sup>153</sup> This authority has led Congress to pass several copyright statutes throughout history.<sup>154</sup> The first major act, the Copyright Act of 1909 was established to achieve the “ultimate goal . . . [of] enhanc[ing] public welfare.”<sup>155</sup> In an early music copyright litigation dispute, *Herbert v. Shanley Co.*, the Supreme Court ruled that when a for-profit business plays a songwriter’s musical work, the performance constitutes a public performance of the copyright holder’s work for profit, and, accordingly, the business owner must compensate the copyright holder for the performance.<sup>156</sup> Here too, we see an early articulation by the Court of the necessity of compensating the value-creator, or owner, for his or her property’s use.

In general, mechanical licenses to reproduce music are set at a “statutory rate” by the Copyright Arbitration Panel, under the Copyright Act.<sup>157</sup> Each musical license contains two types of copyright—a “musical work” copyright and a “sound recording” copyright.<sup>158</sup> “The owner of a musical work[, generally the songwriter,] possesses exclusive rights under the Copyright Act, including the right to authorize others to exploit [other] exclusive rights.”<sup>159</sup> Musical copyright owners can also license the rights to publicly perform their work, and these rights are often licensed either through a flat fee or through a royalty-type percentage of profits made.<sup>160</sup> The rights surrounding a sound recording copyright, usually possessed by a record label, include the exclusive right to “make and distribute copies or phonorecords” (e.g., CDs and DVDs) of the work.<sup>161</sup> Currently, for distribution of “permanent downloads or physical phonorecords of a musical

work,” the royalty rate is 9.1 cents per copy distributed.<sup>162</sup> In the online music-streaming context, the rate is generally 10.5 to 12 percent of the online service’s revenue from the streaming of that work.<sup>163</sup> Royalty rates for mechanical music licensing have increased over time. The Copyright Act of 1909 first set compulsory mechanical licensing rates at only 2 cents per reproduction.<sup>164</sup>

Royalty rates have also been used, and suggested for use, in varying remedial contexts in the music industry. For example, in the rise of home audio recording in the late 20th century, Stuart Talley proposed that Congress “increase royalties on blank tapes” in order to discourage home recording while compensating the original artists, whom home recording affects.<sup>165</sup> As in the patent context, reasonable royalties in the music context are determined through several factors. Under the Copyright Act of 1976, Copyright Royalty Judges (CRJs, officers appointed by the Librarian of Congress to collect royalties), must determine reasonable royalty rates that balance four goals: “(1) to ‘maximize the availability of creative works,’ (2) to provide a ‘fair’ return to both the copyright owner and the copyright user, (3) to ‘reflect the relative roles’ of the owner and user as to ‘creative contribution, technological contribution, capital investment,’ and the like; and (4) to minimize any disruptive impact on industry structure.”<sup>166</sup> Thus, the royalty determination seeks to balance competing interests in order to ensure profitability for both copyright holder and user, while also valuing the creative work of the original artist and industry stability as a whole.

In the context of copyright law, the royalty rate has also been used to account for positive externalities. Specifically, the Copyright Act “codifies the equitable doctrine of fair use by providing a defense for infringing uses which are permissible because their overall value to society outweighs the copyright owner’s interest in enforcing its property boundaries.”<sup>167</sup> In evaluating the defense of fair use, courts balance four factors: “(1) the purpose and character of the use (for example, commercial v. non-profit); (2) the nature of the copyrighted work (factual v. fiction); (3) the amount and substantiality of the portion used in relation to the copyrighted work as a whole; and (4) the effect of the use upon the potential market for or value of the copyrighted work.”<sup>168</sup> As one legal commentator wrote, “the strongest case for royalty-free fair use is the large number of positive externalities that are created through the use of creative/copyrightable subject matter.”<sup>169</sup> Just as positive externalities can justify lower royalty rates, negative externalities can justify higher royalty rates.

In sum, royalty rates are used in the intellectual property context in a variety of industries. In general, royalty rate determinations incorporate multiple factors, seeking to compensate the property owner or patent holder for the value of his work, while also accounting for value gained by the infringer. Much as Interior is empowered to do in the federal natural resources context—and has recently done, with respect to offshore oil and gas production—royalty rates are determined by considering context-specific factors, such as the nature of the property at issue, positive or negative externalities, and more.

## Conclusion

Royalties have several commonly accepted justifications, including sharing in economic rent; compensating the owner for removal of a nonrenewable resource; and compensating the owner for negative externalities. While the externality justification appears much more frequently in recent economic literature and legislative history, royalties have been used as a policy lever to influence behavior and meet national goals for centuries. Historical uses, accepted economic justifications, legislative history, and examples of royalty use by private actors and in other industries all support the determination that it would be reasonable for Interior to increase coal royalty rates to account for externality costs and to better align the federal coal program with national climate change priorities.

# Endnotes

- <sup>1</sup> U.S. DEP'T OF THE INTERIOR, OFFICE OF THE SECRETARY, Press Release: Secretary Jewell Launches Comprehensive Review of Federal Coal Program (Jan. 15, 2016), available at <https://www.doi.gov/pressreleases/secretary-jewell-launches-comprehensive-review-federal-coal-program>.
- <sup>2</sup> Robert E. Sullivan, *All About Royalties*, 16 ROCKY MTN. MIN. L. INST. 7 (1971). Commentators emphasize its impact to varying degrees, though Robert Sullivan argues it “was significant.” *Id.*
- <sup>3</sup> Dante L. Zarlengo, *Royalty Concepts and Present Applications to Federal Oil and Gas and Coal Leases*, 19 ROCKY MTN. MIN. L. INST. 1 (1986).
- <sup>4</sup> *Id.*; John S. Lowe, *Defining the Royalty Obligation*, 49 SMU L. REV. 223, 258 (1996).
- <sup>5</sup> Zarlengo, *supra* note 3.
- <sup>6</sup> *Id.* Despite hesitation among scholars to use royalty and rent interchangeably, some mineral leases have used them that way. See Sullivan, *supra* note 2 (citing 2 BOUVIER'S LAW DICTIONARY (Rawle's ed. 1914)).
- <sup>7</sup> Zarlengo, *supra* note 3.
- <sup>8</sup> Sullivan, *supra* note 2 (citing 1 LINDLEY, MINES §§ 2, 3 (3d ed. 1914); 2 SNYDER ON MINES § 1276 (1902)).
- <sup>9</sup> The specification of the 20 percent royalty rate on war loot was institutionalized from the start of the Islamic conquest, with the rate set down in the Quran, in Sura VIII (Al-Anfal), verse 41: “And know that out of all the booty that ye may acquire (in war), a fifth share is assigned to Allah . . .” (Quran 8:41).
- <sup>10</sup> Charles Thomson, THE ORDINANCES OF THE MINES OF NEW SPAIN: TRANSLATED FROM THE ORIGINAL SPANISH, WITH OBSERVATIONS UPON THE MINES AND MINING ASSOCIATIONS 142, 147 (1825).
- <sup>11</sup> See Laura H. Burney, *Interpreting Mineral and Royalty Deeds: The Legacy of the One-Eighth Royalty and Other Stories*, 33 ST. MARY'S L.J. 1, 3 n.4 (2001) (citing Leslie Moses, *The Evolution and Development of the Oil and Gas Lease*, 2 INST. ON OIL & GAS L. & TAX'N 1, 10 (1951)); see also Noelle C. Letteri, *Resolving the Multi-Fractional Deed Dilemma—Concord Oil Co. v. Pennzoil Exploration & Production Co.*, 30 ST. MARY'S L.J. 615, 653 (1999) (also citing Moses).
- <sup>12</sup> See, e.g., *Garrett v. Dils Co.*, 299 S.W.2d 904, 907 (Tex. 1957) (“The court takes judicial knowledge of the fact that the usual royalty provided in mineral leases is one-eighth.”); *Leonard v. Prater*, 36 S.W.2d 216 (Tex. Comm'n App. 1931) (“It is a matter of common knowledge that the customary compensation to lessors, paid by lessees, under conditions similar to those existing at the time the original contract was executed, is 1/8 of the gross production as royalty.”).
- <sup>13</sup> See, e.g., *Newburg Petroleum Co. v. Weare*, 27 Ohio St. 343, 348 (1875) (discussing a dispute involving a one-sixth royalty).
- <sup>14</sup> See, e.g., Larry L. Dale, *The Pace of Mineral Depletion in the United States*, 60(3) LAND ECON. 255 (1984); John H. Mutti & William E. Morgan, *Changing Energy Prices and Economic Rents. The Case of Western Coal*, 59 LAND ECON. 164, 164-65 (1983); John E. Orchard, *The Rent of Mineral Lands*, 36(2) QJ. ECON. 290, 290-91 (1922); ROSS GARNAUT & ANTHONY CLUNIES ROSS, *TAXATION OF MINERAL RENTS 1*, 17-36 (Clarendon Press Oxford 1983).
- <sup>15</sup> DAVID RICARDO, *ON THE PRINCIPLES OF POLITICAL ECONOMY AND TAXATION* (London 1817), available at <http://www.econlib.org/library/Ricardo/ricP1a.html> (Chapter 2).
- <sup>16</sup> *Id.*
- <sup>17</sup> See Orchard, *supra* note 14, at 298-99. In the short run, all profitable mines arguably earn economic rents because they will operate as long as they recover their variable costs.
- <sup>18</sup> *Id.*
- <sup>19</sup> See GARNAUT & CLUNIES ROSS, *supra* note 14, at 22.
- <sup>20</sup> Even assuming that there are no externalities and that the royalty perfectly captures economic rent, it is possible that, in the long run, the royalty will distort behavior because it will reduce incentives for discovering high-quality mineral deposits.
- <sup>21</sup> EXECUTIVE OFFICE OF THE PRESIDENT, *THE ECONOMICS OF COAL LEASING ON FEDERAL LANDS: ENSURING A FAIR RETURN TO TAXPAYERS*, White House, Council of Economic Advisors, at 11-12 (June 2016) [hereinafter CEA REPORT].

- <sup>22</sup> Whether a royalty actually captures economic rent is a separate matter. Such a royalty would be specific to each site, based on ex ante predictions of economic rent given the site's attributes and associated production costs, which may itself diverge from ex post realized costs. See Radford Schantz, Jr. *Purpose and Effects of a Royalty on Public Land Minerals*, 20(1) *RESOURCES POLICY* 35, 37 (1994). Generally speaking, a federal royalty could not perfectly capture such rent. See, e.g., P.S. DASGUPTA & G.M HEAL, *ECONOMIC THEORY AND EXHAUSTIBLE RESOURCES* 362 (1980) ("The subject is particularly murky, since the structure of optimum taxes often depends sensitively on the constraints the government faces in wielding the various controls available to it."); JAMES OTTO ET AL., *MINING ROYALTIES: A GLOBAL STUDY OF THEIR IMPACT ON INVESTORS, GOVERNMENT, AND CIVIL SOCIETY* 30 (World Bank 2006).
- <sup>23</sup> Orchard, *supra* note 14, at 307-08. Notably, Orchard and the American mining operators that he quotes also refer to user costs, a concept discussed *infra* in the next Section, as partly justifying the royalty rate.
- <sup>24</sup> *Id.* at 296 (quoting Rossiter W. Raymond, an American mining engineer, then secretary of the American Institute of Mining Engineers, in his testimony before the British Royal Commission on Mining Royalties appointed in 1889).
- <sup>25</sup> *Id.* (quoting T. H. Bailey, a Birmingham mining engineer, testifying before a 1919 British coal commission).
- <sup>26</sup> *Id.* at 298.
- <sup>27</sup> *Id.* at 299-300.
- <sup>28</sup> *Id.* at 299.
- <sup>29</sup> *Id.* at 302-03. Most illustrative is the French practice in 1890 of setting variable royalty rates that ranged from 1/6th of yield for coal mined from the shallowest and thickest seams to 1/80th of the yield for coal mined from the deepest and thinnest seams. See *id.*
- <sup>30</sup> This issue has attracted significant debate in economics. Some economists argue that royalties for nonrenewable resources are not rents, see, e.g., ALFRED MARSHALL, *PRINCIPLES OF ECONOMICS*, Book V, Chapter X, 254 (8th ed. 1920), available at <http://eet.pixel-online.org/files/etranslation/original/Marshall,%20Principles%20of%20Economics.pdf>, while others argue that the concept of rent is relevant, see e.g., Lewis Cecil Gray, *Rent Under the Assumption of Exhaustibility*, 28(3) *Q.J. ECON.* 466, 467-70 (1914). Still others conclude that royalties include both economic rent and user cost. See Orchard, *supra* note 14, at 290-97; see also Ben Fine, *Landed Property and the Distinction between Royalty and Rent*, 58(3) *LAND ECON.* 338, 343-45 (1982) (arguing that the question itself is irrelevant from a general equilibrium context).
- <sup>31</sup> Harold Hotelling, *The Economics of Exhaustible Resources*, 39(2) *J. POL. ECON.* 137-175 (1931).
- <sup>32</sup> MARSHALL, *supra* note 30.
- <sup>33</sup> See, e.g., Dale, *supra* note 14.
- <sup>34</sup> See Hotelling, *supra* note 31, at 165-69; Gerard Gaudet et al., *Optimal Resource Royalties with Unknown and Temporally Independent Extraction Cost Structures*, 36(3) *INT'L ECON. REV.* 715 (1995); Dale, *supra* note 14, at 255-56; DASGUPTA & HEAL, *supra* note 22.
- <sup>35</sup> See Mutti & Morgan, *supra* note 14.
- <sup>36</sup> *Id.*
- <sup>37</sup> Orchard, *supra* note 14, at 295.
- <sup>38</sup> *Id.* at 296.
- <sup>39</sup> See OTTO ET AL., *supra* note 22, at 29; Mutti & Morgan, *supra* note 14 ("The federal government is receiving substantially higher royalty rates on new leases, but the higher current rates do not reflect a Marshallian royalty because the stock of western coal is virtually unlimited.").
- <sup>40</sup> *Id.*
- <sup>41</sup> *Federal Coal Leasing Amendments Act of 1975: Hearing on S. 391 Before the Subcomm. On Minerals, Materials and Fuels of the S. Comm. On Interior and Insular Affairs*, 94 Cong. 504 app. (1975) [hereinafter *Hearing on S. 391*]; see also Orchard, *supra* note 14, at 295-96.
- <sup>42</sup> See William D. Schulze, *Optimal Use of Non-Renewable Resources: The Theory of Extraction*, 1 *J. ENVTL. ECON. & MGMT.* 53 (1974); Timothy R. Muzondo, *Mineral Taxation, Market Failure, and the Environment*, 40(1) *IMF STAFF PAPERS* 152, 160-62 (1993).
- <sup>43</sup> CEA REPORT, *supra* note 21, at 2, 10; see also Gaudet et al., *supra* note 34, at 716 (characterizing the situation as a principal-agent problem in which the government seeks to capture all economic rents).
- <sup>44</sup> See CEA REPORT, *supra* note 21, at 10; see also GARNAUT & CLUNIES ROSS, *supra* note 14, at 3-4 (noting that maximizing government revenue can coincide with maximizing social welfare when, among other things, "externalities are

compensated”); Schantz, *supra* note 22, at 36 (“When the government/landowner sells mineral rights, the rent ought to cover expected opportunity and environmental costs arising from anticipated mining activities.”); Orchard, *supra* note 14, at 313; OTTO ET AL., *supra* note 22, at 29-30.

<sup>45</sup> See CEA REPORT, *supra* note 21, at 10.

<sup>46</sup> See Muzondo, *supra* note 42, at 162 (“These results [after accounting for negative externalities in Hotelling’s model] suggest that in mining, where environmental taxes are rarely imposed, but specific taxes are popular with governments, such taxes have a redeeming feature: they can be considered proxies for current environmental externalities.”); Schantz, *supra* note 22, at 36.

<sup>47</sup> Orchard, *supra* note 14, at 295-96. In addition, this justification is implicit in the concern that “it may not be desirable to encourage underground mining [via a lower royalty rate] until technology has evolved which will allow a higher percentage of recovery be underground mining,” see *Hearing on S. 391*, *supra* note 41—that is, a concern that society may benefit more if the resource is left in the ground and potentially mined at lower social cost in the future.

<sup>48</sup> See, e.g., ROBERT H. NELSON, THE MAKING OF FEDERAL COAL POLICY 1, 225 (arguing, in 1981, that the royalty rate is excessive partly because states can, and do, get compensated for the “public costs of coal mining” through direct taxes).

<sup>49</sup> See Salvatore Lazzari, The Federal Royalty and Tax Treatment of the Hardrock Mineral Industry: An Economic Analysis, Congressional Research Service Reports – Taxation (June 13, 2008). Other commentators have noted that, practically speaking, the government would have been unable to enforce and collect a royalty in some regions, even if it did set one at that time.

<sup>50</sup> *Royalty Concepts and Present Applications to Federal Oil and Gas and Coal Leases*, 19D ROCKY MTN. MIN. L. INST. 1 (1986). The fact that offshore oil-and-gas royalty rates are now significantly higher than minimum onshore coal royalty rates (18.75 percent for offshore drilling in the Gulf of Mexico versus 12.5 percent for surface-mined coal and 8 percent for underground coal) further underscores the need to re-evaluate coal royalty rates.

<sup>51</sup> See *Hearing on S. 391*, *supra* note 41.

<sup>52</sup> See Schantz, *supra* note 22, at 36.

<sup>53</sup> *Id.*

<sup>54</sup> See B. J. Scott & A.D. Cody, *Response of the Rotorua Geothermal System to Exploitation and Varying Management Regimes*, 29 GEOTHERMICS (2000). The royalty was effective, eventually resulting in signs of recovery for the reservoir. See *id.*; B.W. O’Shaughnessy, *Use of Economic Instruments in Management of Rotorua Geothermal Field, New Zealand*, 29 Geothermics (2000).

<sup>55</sup> See, e.g., Mutti & Morgan, *supra* note 14, at 167 (“Stated differently, assuming impact costs vary among locations, it is desirable from an efficiency perspective to adopt policies that discriminate according to site-specific impact costs rather than financing impact through severance taxes that are imposed at a uniform rate.”); Schantz, *supra* note 22, at 36.

<sup>56</sup> Mutti & Morgan, *supra* note 14; Schantz, *supra* note 22, at 36.

<sup>57</sup> Schantz, *supra* note 22, at 36.

<sup>58</sup> *Id.* at 39; see also Orchard, *supra* note 14, at 295-96 (suggesting the minimal royalty compensates the landowner in part for otherwise uncompensated externalities of mining such as “the marring of the beauty of the locality with an ugly mine mouth, a black coal tipple, or a dump heap”).

<sup>59</sup> Schantz, *supra* note 22, at 39.

<sup>60</sup> *Id.*

<sup>61</sup> *Id.* at 40.

<sup>62</sup> *Id.*

<sup>63</sup> See, e.g., Muzondo, *supra* note 42, at 164-65 (summary table); I. Falk, *Dynamical Ecologic Taxes: Public Control for Interrelated Renewable Resources*, 13 RESOURCE & ENERGY (1991) (evaluating various policies to deal with pollution in the context of Interrelated renewable resources).

<sup>64</sup> See GARNAUT & CLUNIES ROSS, *supra* note 14, at 92-94.

<sup>65</sup> See, e.g., Evan F. Koenig, *Indirect Methods for Regulating Externalities under Uncertainty*, 100(2) QJ. ECON. 479 (1985); Jukka Pirttila, *Specific versus ad valorem Taxation and Externalities*, 76(2) J. ECON. 177 (2002).

<sup>66</sup> Koenig, *supra* note 65, at 491-92.

<sup>67</sup> JOHN C. LACY, *HISTORICAL OVERVIEW OF THE MINING LAW: THE MINER’S LAW BECOMES LAW, IN THE MINING LAW OF 1872: A LEGAL AND HISTORICAL ANALYSIS* 13, 16 (1989).

- <sup>68</sup> Shelby D. Green, *Reclaiming the Public Domain by Repeal of the Mining Law of 1872*, 6 HOFSTRA PROP. L.J. 85, 152 (1993) (citing LACY, *supra* note 67, at 16-17).
- <sup>69</sup> *Id.* at n. 21.
- <sup>70</sup> Fee simple refers to permanent and absolute ownership of property, with freedom to dispose of it at will.
- <sup>71</sup> See Act of July 1, 1864, ch. 205, § 1, 13 Stat. 343; Act of March 3, 1873, ch. 279, § 1, 17 Stat. 607.
- <sup>72</sup> See 30 U.S.C. §§ 26, 29, 30, 37.
- <sup>73</sup> U.S. GOV'T ACCOUNTABILITY OFFICE, *HARDROCK MINING: INFORMATION ON STATE ROYALTIES AND THE NUMBER OF ABANDONED MINE SITES AND HAZARDS* (July 14, 2009), available at <http://www.gao.gov/assets/130/123013.pdf>.
- <sup>74</sup> See *Hearings on Coal Lands and Coal-Land Laws of the United States Before the House Comm. on Pub. Lands*, \*4 59th Cong. 11-13 (1907) (testimony of Edgar E. Clark, Interstate Commerce Commissioner).
- <sup>75</sup> Act of March 3, 1909, ch. 270, 35 Stat. 844 (codified at 30 U.S.C. § 81).
- <sup>76</sup> 30 U.S.C. § 81.
- <sup>77</sup> *Id.*
- <sup>78</sup> Senator Walsh highlighted issues with the prior fee simple system and the goal of retaining federal control over federal lands, stating, "Some possible criticism might be made, as it seems to me, of an act which would contemplate the complete alienation of the land, by which they were to pass entirely out of the ownership and control of the Government of the United States, that by reason of legislation of that character they might possibly get into the hands of some great interest—the oil lands, for instance, getting into the hands of Standard Oil Co." James D. Harris, *The Linowes Commission – Where Are We 25 Years Later?*, 1 ROCKY MTN. MIN. L. INST. 3 (2007) (quoting 43 Cong. Rec. 4251 (1919)).
- <sup>79</sup> 51 Cong. Rec. H14,944 (Sept. 10, 1914) (statement by Mr. Thomson of Illinois).
- <sup>80</sup> *Id.* at 14,955.
- <sup>81</sup> *Id.* at 14,951.
- <sup>82</sup> *Id.* at 14,954.
- <sup>83</sup> Mineral Lands Leasing Act of February 25, 1920, Sec. 7.
- <sup>84</sup> 30 U.S.C. § 187.
- <sup>85</sup> *Federal Coal Leasing: Hearing on S. 3528 Before the Subcomm. on Mines and Mining of the H. Comm. on Interior and Insular Affairs*, 93 Cong. 60 (1974), HRG-1974-IIA-0082 (statement of Jack O. Horton, Assistant Secretary, Land and Water Resources, Department of the Interior) (hereinafter *Hearing on S. 3528*), ("The coal market, as you know, from the twenties down to the mid-sixties was a declining market relative to inflation and, of course, coal was ever cheaper. And it was during this period of time for the benefit of the government to do what the law and regulations permit and that is to recommend coal royalties on the basis of cents per ton. This figure was varied with the quality of the coal and with the difficulties of mining the coal, because this royalty, once in a lease, protected the Government in a declining market. When the market ceased declining in the late sixties, we reversed our type of recommendation, and currently all recommendations to the Bureau of Land Management are a percentage of value royalty with not less than so many cents per ton. And again, it is tailored to the mining conditions and the quality of the coal.").
- <sup>86</sup> PUBLIC LAND LAW REVIEW COMMISSION, *ONE THIRD OF THE NATION'S LAND: A REPORT TO THE PRESIDENT AND TO THE CONGRESS* 1, 38 (1970).
- <sup>87</sup> *Bills to Provide for the Management, Protection, and Development of the National Resource Lands, and for Other Purposes: Hearing on S. 1507 and S. 1292 Before the Subcomm. on Env't. and Land Res. of the S. Comm. on Interior and Insular Affairs*, 94th Cong. 1 (1975), HRG-1975-IIA-0120 (statement of James Evans, Legislative Rep., National Association of Counties).
- <sup>88</sup> 43 U.S.C. § 1701(a)(9).
- <sup>89</sup> Federal Coal Leasing Amendments Act of 1975, Pub. L. No. 94-377, 90 Stat. 1083, 1087 (1976), codified as amended at 30 U.S.C. § 181 et seq.
- <sup>90</sup> U.S. GOV'T ACCOUNTABILITY OFFICE, *NO. GAO-14-140, COAL LEASING: BLM COULD ENHANCE APPRAISAL PROCESS, MORE EXPLICITLY CONSIDER COAL EXPORTS, AND PROVIDE MORE PUBLIC INFORMATION* 3 (Dec. 2013), available at <http://www.gao.gov/assets/660/659801.pdf>.
- <sup>91</sup> Federal Coal Leasing Amendments Act of 1976, Sec. 7(a).
- <sup>92</sup> See *Hearing on S. 3528*, *supra* note 85, at 63.
- <sup>93</sup> 43 CFR 3473.3-2(a)(2); see 47 Fed. Reg. 33114-01 (July 30, 1982); 55 Fed. Reg. 2653-01 (Jan. 26, 1990).
- <sup>94</sup> See, e.g., *Hearing on S. 3528*, *supra* note 85; *Hearing on S. 391*, *supra* note 41.

- <sup>95</sup> *Hearing on S. 3528, supra* note 85, at 62; *see also* also COMPTROLLER GENERAL, IMPROVEMENTS NEEDED IN ADMINISTRATION OF FEDERAL COAL-LEASING PROGRAM 1100 (1972) (“[H]e also might produce much less if he had per ton a higher royalty payment, so he might produce only the richest coal and not go into the less rich coal because of the higher royalty figure.”).
- <sup>96</sup> H.R. Rep. 94-681, 38, 1976 U.S.C.C.A.N. 1943, 1975 WL 12515 (Leg. Hist.).
- <sup>97</sup> *Id.* at 20.
- <sup>98</sup> 30 U.S.C. § 191(a).
- <sup>99</sup> *See* CONGRESSIONAL RESEARCH SERVICE, NO. R40645, U. S. OFFSHORE OIL AND GAS RESOURCES: PROSPECTS AND PROCESSES 19 (April 26, 2010), *available at* <http://fpc.state.gov/documents/organization/142736.pdf>; *see also* Senate Hearing 113-122, Revenue Sharing Hearing before the Committee on Energy and Natural Resources, United States Senate, 113th Congress, 1st Session to Consider S. 1273, The Fair Act of 2013 (July 2013), *available at* <http://www.gpo.gov/fdsys/pkg/CHRG-113shrg85874/html/CHRG-113shrg85874.htm> (stating, *inter alia*, “Revenue sharing is vital for these [coastal] areas to adequately respond to all sorts of impacts associated with enormous influxes of people and equipment;” “States and communities will have less incentive to support this development if they’re expected to shoulder risks and absorb impacts with no opportunity for revenue sharing” “[t]here are also cumulative impacts of offshore energy development such as habitat degradation and coastal erosion that are typically not mitigated at the project level, and it is important for states to address these impacts. Therefore, a significant portion of a state’s revenue share should be directed to addressing those unmitigated cumulative impacts, including through coastal protection and restoration and investments in natural infrastructure such as forested wetlands, marshes, oyster reefs, barrier islands, and dune systems.”).
- <sup>100</sup> *Id.*
- <sup>101</sup> *See* 30 C.F.R. § 219.410(d)(1)(A)-(C).
- <sup>102</sup> *See* 30 C.F.R. § 219.410(d)(1)(A)-(C).
- <sup>103</sup> H.R. 2262 (110th Cong.), Hardrock Mining and Reclamation Act of 2007.
- <sup>104</sup> *Id.*
- <sup>105</sup> H.R. 699 (111th Cong.), Hardrock Mining and Reclamation Act of 2009.
- <sup>106</sup> 43 U.S.C. § 1337.
- <sup>107</sup> U.S. GOVERNMENT ACCOUNTABILITY OFFICE, NO. GAO-14-50, OIL AND GAS RESOURCES: ACTIONS NEEDED FOR INTERIOR TO BETTER ENSURE A FAIR RETURN 13–14 (Dec. 2013), *available at* <http://www.gao.gov/assets/660/659515.pdf>.
- <sup>108</sup> Hon. Ken Salazar, Secretary of the Interior, “Interior, Environment, and Related Agencies Appropriations for 2013,” Testimony before the House Committee on Appropriations, Subcommittee on Interior, Environment, and Related Agencies (Feb. 16, 2012), pp. 46–47, *available at* <https://www.gpo.gov/fdsys/pkg/CHRG-112hhr74739/pdf/CHRG-112hhr74739.pdf> (stating, “The underlying principle is we are mandated by statute, mandated by fairness to make sure the American taxpayer is getting a fair return for the assets the American people own.”).
- <sup>109</sup> COLORADO OIL & GAS ASSOC., THE BASICS: MINERAL RIGHTS, ROYALTIES & SURFACE USE AGREEMENTS (2013), [http://www.coga.org/wp-content/uploads/2015/09/3-Basics\\_MineralRights.pdf](http://www.coga.org/wp-content/uploads/2015/09/3-Basics_MineralRights.pdf).
- <sup>110</sup> REAL ESTATE CENTER, TEX. A&M UNIV, HINTS ON NEGOTIATING AN OIL & GAS LEASE 3 (2015) [hereinafter *Hints*], <https://assets.recenter.tamu.edu/documents/articles/229.pdf>.
- <sup>111</sup> *Id.*
- <sup>112</sup> Jeffrey R. Ray, *Shale Gas: Evolving Global Issues for the Environment, Regulation, and Energy Security*, 2 LSU J. OF ENERGY L. & RESOURCES 88 (2013).
- <sup>113</sup> Christopher Timmins & Ashley Vissing, *Shale Gas Leases: Is Bargaining Efficient and What Are the Implications for Homeowners if it is Not?* 30 (Dept. of Econ., Duke Univ., Working Paper, 2014), *available at* [http://public.econ.duke.edu/~timmins/Timmins\\_Vissing\\_11\\_15.pdf](http://public.econ.duke.edu/~timmins/Timmins_Vissing_11_15.pdf).
- <sup>114</sup> Richard A. Grisel, *Look Before You Lease: A Lawyer’s Guide to Oil & Gas Leasing* 7-8 (2013), *available at* <https://works.bepress.com/energylaw/6/>.
- <sup>115</sup> Douglas Atnipp, *Bonus Vs. Royalty: Oil and Gas Landowners’ Dilemma*, LAW360 (June 27, 2013), <http://www.law360.com/articles/452317/bonus-vs-royalty-oil-and-gas-landowners-dilemma>.
- <sup>116</sup> *Hints, supra* note 110, at 15 (“For oil, the conversion is based on ‘market price’ or possibly ‘market value.’ This means the highest posted field price for like grade and gravity of oil in the field where the production occurs. For gas, the conver-

sion is based on ‘proceeds’ or the actual revenue derived from the sale. As such, the resulting price may not necessarily equal its actual market price or market value. Finally, mineral owners may receive physical delivery of his or her share ‘in kind.’ This method presents an alternative when the sale of production is based on long-term contracts. By inserting an option to take either as proceeds or ‘in kind,’ the mineral owner can get the best of both worlds. When the market price rises above the long-term contract price, the mineral owner can take his or her share ‘in kind’ and seek his or her marketing outlet. When the market price falls below the contract price, the lessor can revert back to proceeds.”); *see also* CEA REPORT, *supra* note 21, at 16 (stating that “private coal from Appalachian and interior States rang[es] from \$30 per ton to as high as \$100 per ton (in Virginia), while Federal PRB coal still remains close to \$10 per ton”).

<sup>117</sup> Atnipp, *supra* note 115 (“Expenses incurred through the production stages (e.g., drilling costs, capacity costs, etc.) are borne solely by the lessee. Expenses subsequent to production (i.e., post-production costs) can be either shared or borne solely by the lessee depending on the terms of the O&G lease.”).

<sup>118</sup> Timmins & Vissing, *supra* note 113, at 72.

<sup>119</sup> ANTHONY ANDREWS, UNCONVENTIONAL GAS SHALES: DEVELOPMENT, TECHNOLOGY, AND POLICY ISSUES 27 (2010).

<sup>120</sup> Laurence W. Hancock, Note, *Preventive Law and the Negotiating and Drafting of Coal Leases after the Surface Mining Control and Reclamation Act of 1977*, 81 W. VA. L. REV. 733, 746-47 (1979); *see also* Ray, *supra* note 112, at 79.

<sup>121</sup> Atnipp, *supra* note 115; *see also* Andrew Boslett, Todd Guilfoos & Corey Lang, *Valuation of the External Costs of Unconventional Oil and Gas Development: The Critical Importance of Mineral Rights Ownership 2* (Working Paper, 2016), available at [https://works.bepress.com/corey\\_lang/22/](https://works.bepress.com/corey_lang/22/); *Hints*, *supra* note 110, at 14-15.

<sup>122</sup> ANDREWS, *supra* note 119, at 28-29.

<sup>123</sup> *Id.* at 28.

<sup>124</sup> SOUTHEASTERN WYO. MINERAL DEV. COAL., LANDOWNER GUIDELINES FOR NEGOTIATING A MINERAL LEASE OR SURFACE USE AGREEMENT 4 (2011), available at <http://region8water.colostate.edu/PDFs/Oilgaslandownerguidelines.pdf>.

<sup>125</sup> ANDREWS, *supra* note 119, at 29; Timmins & Vissing, *supra* note 113, at 2; *see also* Priscila Mosqueda, *The Holdouts: Three Families Who Took a Pass on the Fracking Boom – And What it Cost Them*, TEX. OBSERVER (Feb. 16, 2015) (describing a couple that was offered a 25 percent royalty rate by one company in Texas to start drilling a horizontal well under their property).

<sup>126</sup> Timothy Fitzgerald, *Mineral Rights, Leasing, and Royalties: Primer on Oil & Gas for Montana Landowners* (2015), available at <http://www.montana.edu/oilgasleasing/handouts/Webinarfebruary2015.pdf>.

<sup>127</sup> Sean Cassidy, *Division of Royalties – Who Gets What?*, 30(12) ENERGY & MIN. L. INST. 377 (2009). West Virginia also has a “Coalbed Methane Wells and Units” statute, which states that “[t]he royalty interest in a well shall include the right to receive one-eighth of the gross proceeds resulting from the sale of methane at the wellhead and such interest shall exist in the coalbed methane owners.” “Coalbed Methane Wells and Units,” W. Va. Code, § 22-21-17 (2009).

<sup>128</sup> Guarantee of Minimum Royalties, 58 PA. CONS. STAT. § 33 (1979); 58 PA. STAT. ANN. § 33 (2012); *see also* Cassidy, *supra* note 127.

<sup>129</sup> *See* Alex Wolf, *Pa. House Panel Approves Natural Gas Royalty Payment Bill*, LAW360 (June 27, 2016) (describing HB 1391, guaranteed a minimum royalty payment at 12.5 percent, even after post-production costs are included); Marie Cusick, *House Panel Approves Bill to Limit Gas Royalty Deductions*, NPR StateImpact (Mar. 17, 2014) (describing HB 1684, which was “aimed at preventing gas companies from shortchanging landowners on royalty money.”).

<sup>130</sup> S.L. 2012-143 § 4.(d), N.C. Gen. Stat. § 113-423(c) (2012).

<sup>131</sup> Robert J. Burnett, *HB 1391: Putting Teeth Back in Pennsylvania’s Minimum Royalty Statute*, HOUSTONHARBAUGH, available at <http://www.hh-law.com/hb-1391-limits-post-production-cost-deductions/>.

<sup>132</sup> *Id.*

<sup>133</sup> *Id.*

<sup>134</sup> Evelyn M. Sommer, *Patent License Restrictions*, 59 CONN. B.J. 236, 246 (1985).

<sup>135</sup> *Id.* (citing *Zenith Radio Corp. v. Hazeltine Research, Inc.*, 395 U.S. 100 (1969)).

<sup>136</sup> 379 U.S. 29, 33 (1964).

<sup>137</sup> Sommer, *supra* note 134, at 246-47 (quoting Photocopy Equipment Co. v. Rovico, Inc., 359 F.2d 745 (7th Cir. 1966), *on remand* 257 F.Supp. 192 (N.D. Ill. 1966), *aff'd*, 384 F.2d 813 (7th Cir. 1967), *cert. denied*, 390 U.S. 945 (1968)).

<sup>138</sup> This table is taken from Roy J. Epstein & Paul Malherbe, *Reasonable Royalty Patent Infringement Damages After Uniloc*, 39(1) AIPLA Q.J. 3, 4 (2011), who relied on information published by RoyaltySource, a widely used royalty database, *see Industry Royalty Rate Data Summary*, LICENSING ECON. REV. 6 (2007). The royalty database, however, only includes licensing information that parties reported in publicly available sources, such as Securities and Exchange Commission filings. *See* Epstein & Malherbe, *supra*, at 18.

<sup>139</sup> Michelle Porter et al., *Industry Norms and Reasonable Royalty Rate Determination*, 43 LES NOUVELLES 47, 50-51 (2008). The study does not conduct a time series analysis for royalty rates in the chemical industry because of the small sample size of chemical industry royalty rates. *See id.*

<sup>140</sup> 66 A.L.R. Fed. 186 (originally published in 1984).

<sup>141</sup> 35 U.S.C. § 284.

<sup>142</sup> 66 A.L.R. Fed. 186.

<sup>143</sup> 235 U.S. 641, 649 (1915); *see* Christopher B. Seaman, *Reconsidering the Georgia-Pacific Standard for Reasonable Royalty Patent Damages*, 2010 B.Y.U. L. REV. 1661, 1669 (2010).

<sup>144</sup> *See* Seaman, *supra* note 143, at 1670-71; 66 A.L.R. Fed. 186.

<sup>145</sup> *See* Seaman, *supra* note 143, at 1671.

<sup>146</sup> 35 U.S.C. § 284 (in effect since 1952); *see* Seaman, *supra* note 143, at 1671-72..

<sup>147</sup> *Deere & Co. v. Int'l Harvester Co.*, 710 F.2d 1551, 1558 (Fed. Cir. 1983).

<sup>148</sup> *See, e.g.,* Lucent Techs., Inc. v. Gateway Inc., 589 F.3d 1301, 1324 (Fed. Cir. 2009) (quoting *Pall Corp. v. Micron Separations, Inc.*, 66 F.3d 1211, 1223 (Fed. Cir. 1995)).

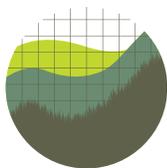
<sup>149</sup> *See* Seaman, *supra* note 143, at 1695-96; *see also* Epstein & Malherbe, *supra* note 138.

<sup>150</sup> *Uniloc USA, Inc. v. Microsoft Corp.*, 632 F.3d 1292, 1313 (Fed. Cir. 2011).

<sup>151</sup> 318 F. Supp. 1116 (S.D.N.Y. 1970), modified by 446 F.2d 295 (2d Cir. 1971). *Georgia-Pacific* identified the following fifteen factors: (1) the royalties received by the patentee for the licensing of the patent in suit, proving or tending to prove an established royalty; (2) the rates paid by the li-

ensee for the use of other patents comparable to the patent in suit; (3) the nature and scope of the license, as exclusive or non-exclusive; or as restricted or non-restricted in terms of territory or with respect to whom the manufactured product may be sold; (4) the licensor's established policy and marketing program to maintain his patent monopoly by not licensing to others to use the invention by granting licenses under special conditions designed to preserve that monopoly; (5) the commercial relationship between the licensor and licensee, such as, whether they are competitors in the same territory in the same line of business; or whether they are inventor and promoter; (6) the effect of selling the patented specialty in promoting sales of other products of the licensee; that existing value of the invention to the licensor as a generator of sales of his non-patented items; and the extent of such derivative or convoyed sale; (7) the duration of the patent and the term of the license; (8) the established profitability of the product made under the patent; its commercial success; and its current popularity; (9) the utility and advantages of the patent property over the old modes or devices, if any, that had been used for working out similar results; (10) the nature of the patented invention; the character of the commercial embodiment of it as owned and produced by the licensor; and the benefits to those who have used the invention; (11) the extent to which the infringer has made use of the invention; and any evidence probative of the value of that use; (12) the portion of the profit or of the selling price that may be customary in the particular business or in comparable businesses to allow for the use of the invention or analogous inventions; (13) the portion of the realizable profit that should be credited to the invention as distinguished from non-patented elements, the manufacturing process, business risks, or significant features or improvements added by the infringer; (14) the opinion testimony of qualified experts; and (15) the amount that a licensor (such as the patentee) and a licensee (such as the infringer) would have agreed upon (at the time the infringement began) if both had been reasonably and voluntarily trying to reach an agreement; that is, the amount which a prudent licensee—who desired, as a business proposition, to obtain a license to manufacture and sell a particular article embodying the patented invention—would have been willing to pay as a royalty and yet be able to make a reasonable profit and which would have been acceptable by a prudent patentee who was willing to grant a license. *See, e.g.,* Ben Johnson, *Public Standards and Patent Damages*, 14 MARSHALL REV. INTELL. PROP. L. 199, 213-14 (2015). The *Uniloc* court sanctioned the continued use of factors 1, 2, and 12 in the determination of a reasonable royalty rate “tied to the relevant facts and circumstances of the particular case at issue.” *Uniloc*, 632 F.3d at 1317-18.

- <sup>152</sup> Peter Dawson, *Royalty Rate Determination*, 8 J. BUS. VALUATION & ECON. LOSS ANALYSIS 133, 135 (2013).
- <sup>153</sup> Vanessa Van Cleaf, *A Broken Record: The Digital Millennium Copyright Act's Statutory Royalty Rate-Setting Process Does Not Work for Internet Radio*, 40 STETSON L. REV. 341, 347 (2010).
- <sup>154</sup> *Id.*
- <sup>155</sup> *Id.*
- <sup>156</sup> 242 U.S. 591, 594-95 (1917).
- <sup>157</sup> E. Scott Johnson, *Long and Winding Road: Music Royalties*, MD. B.J. 33-34 (2004).
- <sup>158</sup> U.S. COPYRIGHT OFFICE, COPYRIGHT AND THE MUSIC MARKETPLACE 16 (2015).
- <sup>159</sup> *Id.* at 25.
- <sup>160</sup> *Id.* at 33.
- <sup>161</sup> *Id.* at 43.
- <sup>162</sup> *Id.* at 30.
- <sup>163</sup> *Id.*
- <sup>164</sup> *Id.* at 26.
- <sup>165</sup> Stuart Talley, *Performance Rights in Sound Recordings: Is There Justification in the Age of Digital Broadcasting?* 28 BEVERLY HILLS B. ASS'N J. 79, 101 (1994).
- <sup>166</sup> Thomas G. Field, Jr. *Reciprocal Influences of Changes in the Perceived Status of Intellectual Property Officials*, 41 AIPLA QJ. 593, 607-08 (2013)(quoting 17 U.S.C. § 801(b)(1)(A)-(D)).
- <sup>167</sup> Simone A. Rose, *On Purple Pills, Stem Cells, and Other Market Failures: A Case for A Limited Compulsory Licensing Scheme for Patent Property*, 48 HOW. L.J. 579, 610-11 (2005).
- <sup>168</sup> *Id.*
- <sup>169</sup> *Id.*



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# CLE READING MATERIALS

## Fracking and the NIMBY Syndrome

FOR

2:40 p.m. – 4:00 p.m.

**EMERGING ISSUES IN NATURAL RESOURCES POLICY**

- **Nada Culver**, Senior Counsel and Director, The Wilderness Society's BLM Action Center
- **David J. Hayes**, Executive Director, State Energy and Environmental Impact Center at NYU Law; former Deputy Secretary of the Interior
- **Brenda Mallory**, Executive Director and Senior Counsel, Conservation Litigation Project; former General Counsel for the White House Council on Environmental Quality
- Moderator: **Jayni Hein**, Policy Director, Institute for Policy Integrity

**PLEASE RETURN TO REGISTRATION TABLE**

# FRACKING AND THE NIMBY SYNDROME

EMEKA DURUIGBO\*

*With the pro-fossil fuel disposition of the Trump administration, the momentum surrounding the recent rebound in fracking operations in the United States is likely to be sustained. Thorny questions about fracking will also remain and retain considerable force. The Not in My Backyard (NIMBY) phenomenon predates shale oil and gas development, but because of the potential for inflicting tremendous damage on residential property values, the extraction of these natural resources through hydraulic fracturing presents a new theater for NIMBY protests. This Article examines the adverse effects of shale gas development in residential areas and how the inveterate tension among home owners, residents, and energy companies can be resolved. The Article proposes resolving the conflicts pertaining to property value diminution and deleterious impact on quality of life by introducing a mix of public policy and private tools, consisting of limited purpose agreements and disruption payments. This approach ensures that the benefits of shale gas development are retained while its inconveniences are given the desired attention.*

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\* Professor of Law and Co-Director of the Institute for International and Immigration Law, Thurgood Marshall School of Law, Texas Southern University. This Article has benefited from the generous support of the University's Seed Grants program and the Law School's summer research stipend, for which I am deeply grateful. Special thanks to Caleb Fielder of Anadarko Petroleum Corporation for his insightful comments that helped tremendously in improving the quality of this Article. Many thanks to my very able and highly effective research and editorial assistants who worked tirelessly on this multi-year project: Mehdi Cherkaoui, Iveoma Okparaeké, Adenike Adesokan, Newton Tamayo, Mya Johnson, and John Truong.

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#### INTRODUCTION

The United States produces a large portion of the natural gas it uses from conventional reservoirs, which are desired for their porosity and permeability.<sup>1</sup> However, there are also, in a number of states, enormous oil and natural gas resources in unconventional reservoirs that are hardly permeable, such as shale oil, tight oil, shale gas, tight gas, and coalbed methane, and thus are not accessible or recoverable through conventional production methods and techniques.<sup>2</sup> These natural gas deposits abound in many places, including the Barnett Shale region in Fort Worth, Texas, the Haynesville Shale region that cuts across East Texas and Louisiana, the Marcellus Shale region that encompasses Pennsylvania, West Virginia, Ohio, and New York,<sup>3</sup> and the

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<sup>1</sup> See Monika Ehrman, *The Next Great Compromise: A Comprehensive Response to Opposition Against Shale Gas Development Using Hydraulic Fracturing in the United States*, 46 TEX. TECH. L. REV. 423, 430 (2014) (“In traditional petroleum geology and engineering, sandstones are considered high-quality reservoir rocks with high porosity and high permeability, while shales are considered high-quality seal rocks with low porosity and low permeability.”); see also Phillip E. Norvell, *Prelude to the Future of Shale Gas Development: Well Spacing and Integration for the Fayetteville Shale in Arkansas*, 49 WASHBURN L.J. 457, 473 (2010) (“A conventional oil and gas reservoir is characterized by adequate porosity, permeability, and reservoir energy, which drives the oil and gas in the reservoir to the well bore.”); see generally Dianne Rahm, *Regulating Hydraulic Fracturing in Shale Gas Plays: The Case of Texas*, 39 ENERGY POL’Y 2974 (2011).

<sup>2</sup> See Michael Binnion, *How the Technical Differences Between Shale Gas and Conventional Gas Projects Lead to a New Business Model Being Required to Be Successful*, 31 MARINE & PETROLEUM GEOLOGY 5 (2012) (discussing “the extremely low permeability of shale”); see also Zou Caineng et al., *Geological Characteristics and Resource Potential of Shale Gas in China*, 37 PETROLEUM EXPLORATION & DEV. 641, 641 (2010); Rahm, *supra* note 1, at 2974–75.

<sup>3</sup> See Susan L. Sakmar, *The Global Shale Gas Initiative: Will the United States Be the Role Model for the Development of Shale Gas Around the World?*, 33 HOUS. J. INT’L L. 369, 382–85 (2011).

Bakken Shale region that includes North Dakota and Montana.<sup>4</sup>

Production from these unconventional reservoirs has been made possible through hydraulic fracturing, a practice commonly referred to as “fracking.”<sup>5</sup> Because of the growing interest in developing energy alternatives to oil, the fact that natural gas is significantly cleaner than coal, the gradual reduction and increased difficulty of developing conventional natural gas resources, the concern about reliability of energy supplies from volatile regions of the world, and the advancements in natural gas extraction technologies,<sup>6</sup> the United States is poised to meet a substantial portion of its domestic energy and export needs by developing its unconventional natural gas deposits.<sup>7</sup> Indeed, the United States has become a net exporter of natural gas.<sup>8</sup> It appears that we are now

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<sup>4</sup> See Daniel Johnston, *Changing Fiscal Landscape 2008–2017*, 10 J. WORLD ENERGY L. & BUS. 415, 419 (2017); Matthew T. Wansley, *Regulation of Emerging Risks*, 69 VAND. L. REV. 401, 454 (2016).

<sup>5</sup> This article adopts the approach to the definition of fracking applied by Environment Texas Research and Policy Center.

[W]hen we refer to the impacts of “fracking,” we include impacts resulting from all the activities needed to bring a well into production using hydraulic fracturing, to operate that well, and to deliver the gas or oil produced from that well to market. The oil and gas industry often uses a more restrictive definition of “fracking” that includes only the actual moment in the extraction process when rock is fractured . . . .

RUMPLER ET AL., ENV’T AM. RESOURCES & POL’Y CTR., THE COSTS OF FRACKING: THE PRICE TAG OF DIRTY DRILLING’S ENVIRONMENTAL DAMAGE 3 (2012).

<sup>6</sup> See Da Young Kim, *A Lesson from the Shale Revolution in the United States, Canada, and China*, 29 GEO. INT’L ENVTL. L. REV. 747, 761 (2017) (“In the United States, given its long history of energy dependence and concerns about energy security, the advent of fracking received a fairly warm welcome.”); Thomas W. Merrill & David M. Schizer, *The Shale Oil and Gas Revolution, Hydraulic Fracturing, and Water Contamination: A Regulatory Strategy*, 98 MINN. L. REV. 145, 161–64 (2013).

<sup>7</sup> See Zhao Xingang et al., *Focus on the Development of Shale Gas in China—Based on SWOT Analysis*, 21 RENEWABLE & SUSTAINABLE ENERGY REVS. 603, 604 (2013); see also Steffen Jenner & Alberto J. Lamadrid, *Shale Gas vs. Coal: Policy Implications from Environmental Impact Comparisons of Shale Gas, Conventional Gas, and Coal on Air, Water, and Land in the United States*, 53 ENERGY POL’Y 442, 443 (2013); Coral Davenport, *Coal Is on the Way Out at Electric Utilities, No Matter What Trump Says*, N.Y. TIMES (Apr. 5, 2017), <https://www.nytimes.com/2017/04/05/business/dealbook/coal-utilities-regulation-trump.html>. (“With or without the Clean Power Plan, power companies say, coal is simply no longer the fuel of choice for keeping the lights on in America—and they do not expect it to make a comeback. Cheaper natural gas and renewable sources like wind and solar power have replaced it.”).

<sup>8</sup> See Naureen S. Malik, *U.S. Becomes a Net Gas Exporter for the First Time in*

being ushered into a natural gas era, with natural gas poised to become the largest source of energy globally by 2050.<sup>9</sup> Shale gas development through hydraulic fracturing is an important factor in this equation.<sup>10</sup>

Hydraulic fracturing was first developed in the United States in the 1860s.<sup>11</sup> Over time, it underwent significant improvements, leading to the birth of modern fracking in the 1940s.<sup>12</sup> Thus, modern fracking has been in use in the United States for almost seventy years.<sup>13</sup> The most modern form of this technology was created in the 1990s.<sup>14</sup> Natural gas fracking is a gas drilling and extraction process that consists of injecting fluid into a well to cause the fracture of subsurface formations and consequent escape of natural gas into a production channel.<sup>15</sup> Until the more recent modernization of this technological process, and its economic viability, huge volumes of natural gas remained untapped.<sup>16</sup> Texas pioneered the use of hydraulic fracturing in horizontal wells in the United States in the 1990s as a means of forcing out the last vestiges of gas from old wells in the Barnett Shale.<sup>17</sup>

Hydraulic fracturing has been viewed as both a savior and a

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60 Years, BLOOMBERG (Jan. 10, 2018), <https://www.bloomberg.com/news/articles/2018-01-10/u-s-became-a-net-gas-exporter-for-the-first-time-in-60-years>.

<sup>9</sup> See Irina Slav, *Is Big Oil Prepared for the Natural Gas Era?*, OILPRICE.COM, (Sept. 4, 2017, 11:00 AM CDT), <http://oilprice.com/Energy/Crude-Oil/Is-Big-Oil-Prepared-For-The-Natural-Gas-Era.html>. (“By 2034, natural gas will overtake oil as the main source of energy, and by 2050 it will be the single largest such source globally, satisfying 27 percent of demand.”) (last visited Sept. 17, 2017).

<sup>10</sup> See Changjian Wang et al., *Is China Really Ready for Shale Gas Revolution—Re-evaluating Shale Gas Challenges*, 39 ENVTL. SCI. & POL’Y 49, 49–50 (2014).

<sup>11</sup> See John Manfreda, *The Real History of Fracking*, OILPRICE.COM, (Apr. 13, 2015, 4:10 PM), <http://oilprice.com/Energy/Crude-Oil/The-Real-History-Of-Fracking.html>.

<sup>12</sup> See *id.*

<sup>13</sup> See *id.*

<sup>14</sup> See *id.*

<sup>15</sup> See DeSheng Hu & Shenqing Xu, *Opportunity, Challenges and Policy Choices for China on the Development of Shale Gas*, 60 ENERGY POL’Y 21, 22 (2013).

<sup>16</sup> See Caleb Madere, *Covert Capture: Hydraulic Fracturing and Subsurface Trespass in Louisiana*, 75 LA. L. REV. 865, 868–69 (2015).

<sup>17</sup> See Thomas W. Merrill, *Four Questions About Fracking*, 63 CASE W. RES. L. REV. 971, 973 (2013); see also Norvell, *supra* note 1, at 457 (“The Barnett Shale play in Texas is the first modern shale gas development and the progenitor of the present shale-gas boom in the United States.”); Binnion, *supra* note 2, at 4.

villain.<sup>18</sup> On the positive front, it has been associated with a number of social, economic, and energy benefits including increased energy security, revitalization of communities hosting fracking operations, growth in employment, increased tax revenues and enhanced economic activity through low energy prices.<sup>19</sup> On the other hand, it has generated substantial fears as concerns about earthquakes and pollution of water aquifers mingle with constraints on property rights and potential diminution of housing values.<sup>20</sup> These housing challenges can overwhelm current and potential home owners.<sup>21</sup> On the other hand, fracking could also

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<sup>18</sup> See, e.g., Qiang Wang et al., *Natural Gas from Shale Formation—The Evolution, Evidences and Challenges of Shale Gas Revolution in United States*, 30 RENEWABLE & SUSTAINABLE ENERGY REVS. 1, 1 (2014).

<sup>19</sup> See, e.g., Zheng Wan, Tao Huang & Brian Craig, *Barriers to the Development of China's Shale Gas Industry*, 84 J. OF CLEANER PROD. 818, 818 (2014) (stating that shale gas production is a way to minimize dependence on foreign energy imports and the negative consequences of such reliance); see also Thomas C. Kinnaman, *The Economic Impact of Shale Gas Extraction: A Review of Existing Studies*, 70 ECOLOGICAL ECON. 1243, 1243 (2014); Sylvia Pfeifer, *Finds that Form a Bedrock of Hope*, FIN. TIMES (April 22, 2012), <https://www.ft.com/content/e04264c8-8a2e-11e1-a0c8-00144feab49a>.

<sup>20</sup> See generally Avner Vengosh et al., *The Effects of Shale Gas Exploration and Hydraulic Fracturing on the Quality of Water Resources in the United States*, 7 PROCEDIA EARTH & PLANETARY SCI. 863 (2013); see also Frank Asche et al., *Gas Versus Oil Prices: The Impact of Shale Gas*, 47 ENERGY POL'Y 117, 119 (2012) (“Relevant issues are whether the water and chemicals used in production can migrate to drinking water, and whether produced water can be handled acceptably to avoid pollution. Whether adequate geological separation exists between sub-surface fracture zones and adjacent drinking water reservoirs is another question.”); Ellie Bastian, *Drilling and Community Consent: How Oil and Gas Boards Can Address the Public Health Threats Posed by Fracking*, 102 MINN. L. REV. 343, 344 (2017) (“Fracking and its associated wastewaters have been blamed for causing earthquakes, polluting the air, and polluting ground and surface water.”); Lawrence G. Cetrulo, *The Effects of Fracking*, in 4 TOXIC TORTS LITIGATION GUIDE § 44:6 (2017–2018 ed.) (“The residents surrounding fracking sites suffered damages to their property value as well. Fracking can devalue property in a variety of different ways such as: contaminating underground water; losing control of above-ground land use due to leasing off underground rights; and lowering the quality of life for the surrounding area from air pollution, truck traffic, and noise.”).

<sup>21</sup> See RUMPLER ET AL., *supra* note 5.

Fracking can reduce the value of nearby properties as a result of both actual pollution and the stigma that may come from proximity to industrial operations and the potential for future impacts. A 2010 study in Texas concluded that homes valued at more than \$250,000 and within 1,000 feet of a well site saw their values decrease by 3 to 14 percent—there was no discernible impact on property values beyond that distance or for lower-priced houses. . . . Even where impacts on sales values are difficult to establish, chronic conditions caused by

lead to a rise in some property values, with increased demand for housing by new workers who move into an area to work on oil and gas operations.<sup>22</sup>

To examine some of these concerns more closely, I conducted a focus group in April 2013 of residential property owners in the Dallas-Fort Worth-Arlington area who were targeted for hydraulic fracturing underneath their homes. This area had recorded a sharp increase in urban drilling.<sup>23</sup> Participants, numbering about a dozen men and women, spoke of three major concerns: interference with property freedom, limitation on ability to hold out when negotiations are orchestrated, and the Not in My Backyard (NIMBY) syndrome. While a separate article focuses on the first two concerns, this Article focuses on the third concern relating to the NIMBY phenomenon. This Article argues that fracking raises

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fracking—such as odor, traffic, noise, concerns about pollution of the air and water, earthquake concerns and visual impacts—may adversely affect residents’ use and enjoyment of their homes. Properties on and near locations where fracking is taking place may also be more difficult to finance and insure, potentially affecting their value. Mortgage lenders and insurers have recently taken steps to protect themselves from fracking-related risks. Several mortgage lenders have begun to require extensive buffer zones around homes on land with gas leases before issuing a new mortgage or to refuse to issue new mortgages on land with natural gas leases.

*Id.* at 30 (citations omitted).

<sup>22</sup> See Benjamin E. Apple, *Mapping Fracking: An Analysis of Law, Power, and Regional Distribution in the United States*, 38 HARV. ENVTL. L. REV. 217, 239 (2014); Jennifer Reingold, Will America’s Boomtown Bust? A Report from the Heart of North Dakota’s Fracking Country, FORTUNE (Mar. 1, 2015), <http://fortune.com/north-dakota-fracking/>.

<sup>23</sup> See Bryn D. Meredith, *Regulatory Takings of Mineral Interests and the “Parcel as a Whole”*, 61 INST. ON OIL & GAS L. 1 (2010) (“In Tarrant County alone, a county with almost 1.7 million in estimated population, the number of gas wells has quadrupled in recent years, reaching 1,176 as of February, 2008.”); see also Ernest E. Smith, *The Growing Demand For Oil and Gas and the Potential Impact Upon Rural Land*, 4 TEX. J. OIL GAS & ENERGY L. 1 (2008–2009) (stating that “[m]uch of the current gas boom is centered on the Barnett Shale in urban and exurban areas in and around population centers such as Fort Worth” and further noting that “most of the current controversy over disruptions caused by natural gas development has arisen in suburban areas where homeowners have found themselves unexpectedly faced with near-by drilling and proposals for pipelines across residential areas. . . .”); Pilita Clark, *Fightback Against the Frack Attack*, FIN. TIMES (April 25, 2012), <https://www.ft.com/content/608ba6ec-8e00-11e1-b9ae-00144feab49a> (“The number of horizontally drilled wells producing gas in Texas’s Barnett Shale alone, the most developed U.S. shale area, jumped from fewer than 400 in 2004 to more than 10,000 in 2010. . . .”).

legitimate NIMBY concerns that should be addressed in a manner that fairly distributes the benefits and burdens of shale gas development across society. With appropriate policy interventions, such as disruption payments, shale gas development can proceed in a manner that caters to the needs of mineral owners, surface owners, energy developers, and energy consumers. Accordingly, this Article advocates the adoption of a system of disruption payments in every area in which fracking is employed as a technique for developing shale gas resources. Where public policy responses are slow, business interests should introduce these payments voluntarily, in collaboration with property owners. In addition, shale gas developers should borrow a leaf from the books of residential or commercial real estate developers and use limited purpose agreements to protect against potential diminution of property values. Aside from the benefits that would accrue to the immediate stakeholders, this approach has the added benefit of softening opposition to fracking in places within and outside the United States contemplating the development of their shale gas deposits. Finally, this approach spreads the costs of fracking operations beyond the immediate vicinity of drilling activities.<sup>24</sup>

This Article is organized as follows. Part I provides a synoptic review of the “shale revolution,” delving into its early history and modern implications. Part II discusses the NIMBY phenomenon (a property-related environmental concern), its presence in various industrial contexts and its manifestation in opposition to shale gas projects. Part III presents and responds to the views of focus group participants on the impact of shale gas development on peaceful enjoyment of private property and residential home values in communities hosting or near fracking operations. Part IV introduces some policy suggestions that may be explored to improve the outcomes for residents and property owners that face the negative impact of fracking: economically, aesthetically, and otherwise. These suggestions include the use of disruption payments as a tool to make fracking fairer to residents of areas hosting fracking operations, and the deployment of the limited purpose agreement as a vehicle for arriving at mutually beneficial negotiation outcomes. The Article concludes by noting that with

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<sup>24</sup> See generally Mark Squillace, *Managing Unconventional Oil and Gas Development as if Communities Mattered*, 40 VT. L. REV. 525, 552–54 (2016) (outlining the environmental impact of fracking in residential areas).

the recent rebound in fracking activities, following a slow down due to lower oil and gas prices experienced in the past few years, the need for these changes is more dire than ever before.

### I. SHALE REVOLUTION

Not too long ago, a concern in the United States was whether there would be sufficient oil production to meet domestic needs.<sup>25</sup> Most recently, this concern shifted to whether it was desirable for the United States to start exporting oil and gas produced in the country.<sup>26</sup> The ban on the export of U.S. crude oil was lifted in December 2015,<sup>27</sup> and today, the United States is about to shake the global oil and gas export market.<sup>28</sup> This dramatic turnabout resulted from a number of factors, the most prominent of which is the shale revolution.<sup>29</sup> The fusion of the techniques of hydraulic

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<sup>25</sup> See, e.g., Peter K. Reilly & Christopher S. Heroux, *When Should Interests in Oil and Gas Be Considered Securities?: A Case for the Industry Deal*, 34 S. TEX. L. REV. 37, 38 (1993) (“Total oil imports have increased dramatically since 1985. Over the past few years, domestic reserves have been decreasing at an alarming rate. It is not inconceivable that we could encounter a national crisis similar to those seen in 1973 and 1979, when relatively minor interruptions in supply created internal havoc.”).

<sup>26</sup> See Timothy Gardner, *Boehner Wants to End the US Oil Export Ban*, BUS. INSIDER (Jul. 29, 2015, 11:48 PM), <http://www.businessinsider.com/boehner-wants-to-end-the-us-oil-export-ban-2015-7>; Hu & Xu, *supra* note 15, at 21 (stating that the U.S. was poised to become “a net natural gas exporter by 2035” because of increase in shale gas production); see also Catherine Traywick & Sheela Tobben, *China Surpasses Canada as Top Buyer of US Crude*, BLOOMBERG (Apr. 4, 2017, 11:00 PM), <https://www.bloomberg.com/news/articles/2017-04-04/china-surpasses-canada-as-top-u-s-crude-buyer-amid-record-sales> (discussing how crude exports by the U.S. have been growing recently).

<sup>27</sup> Angela Kao, *Talk is Cheap, So is Oil: Where Do We Go Now that We’ve Lifted the U.S. Crude Oil Export Ban*, 39 HOUS. J. INT’L L. 723, 732 (2017); A. Chase Snodgrass, *Do U.S. LNG Export Laws, Regulations, And Practices Violate International Free Trade Obligations*, 38 ENERGY L.J. 241, 246 (2017).

<sup>28</sup> See Clyde Russell, *U.S. Crude Exports to Asia May Shake up Global Oil Pricing*, REUTERS (Sept. 26, 2017, 12:25 PM), <https://www.reuters.com/article/us-column-russell-crude-asia/u-s-crude-exports-to-asia-may-shake-up-global-oil-pricing-russell-idUSKCN1C12HJ> (analyzing the import of a ten-fold increase in US shale oil exports to Asia in the first eight months of 2017 compared to the same period in the previous year).

<sup>29</sup> See Anas Alhajji, *US Tight Oil and Gas and its Global Impact*, 10 J. WORLD ENERGY L. & BUS. 404, 411 (2017) (discussing how fracking-associated production and export of U.S. oil and gas are changing global markets); Jinsok Sung, *The Impact of US LNG Exports and the Prospects for Price-Competitiveness in the East Asian Market*, 10 J. WORLD ENERGY L. & BUS. 316, 316 (2017) (“The shale revolution in the USA has greatly affected international LNG market participants for dramatically different reasons.”). Other important

fracturing and horizontal drilling has unlocked vast quantities of previously inaccessible deposits of oil and gas, largely in shale rock formations.<sup>30</sup>

Shale gas production in the United States commenced in 1821.<sup>31</sup> Yet for many years, vast quantities of oil and gas in shale and tight rock formations were considered unreachable. By combining available techniques, these resources are now being extracted, spurring a range of activities in a number of states. One commentator describes this journey as follows:

America has been fracking oil wells since right around the time of the Civil War. That said, modern oil well fracking didn't start taking shape until the 1940s, and it wasn't until the 1990s when it was combined with horizontal drilling to unleash the shale gas boom. The industry eventually transferred those two techniques into oil drilling when Continental Resources . . . drilled the first commercially successful well in the North Dakota Bakken. The industry has since taken that combo to other U.S. states, enabling the country to unlock a treasure trove of shale oil resources.<sup>32</sup>

This conjoining of traditional hydraulic fracturing, horizontal drilling, and high-volume injection of fluids led to the coinage of the term “hydrofracking.” The combination of horizontal drilling and hydraulic fracturing significantly increases the extent of drilling and the volume of fracking fluid required. The amalgamation of these techniques is attractive largely because of

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factors include reduced consumption and efficient use of energy as a result of technological breakthroughs and government incentives.

<sup>30</sup> In discussing the success of the shale revolution, one should not lose sight of the vast variety of factors that made it possible. See Shangbin Chen et al., *Shale Gas Reservoir Characterisation: A Typical Case in the Southern Sichuan Basin of China*, 36 ENERGY 6609, 6609 (2011) (“This success has resulted through a combination of scientific study, engineering innovation, new technology and, in some cases, persistence and risk taking.”).

<sup>31</sup> See Alexander Hartwig & Hans-Martin Schulz, *Applying Classical Shale Gas Evaluation Concepts to Germany—Part I: The Basin and Slope Deposits of the Stassfurt Carbonate (Ca<sub>2</sub>, Zechstein, Upper Permian) in Bradenburg*, 70 CHEMIE DER ERDE 77, 77 (2010); see also Caineng et al., *supra* note 2, at 642 (“The 1st shale gas well was drilled in the Devonian Dunkirk shale in the Appalachian Basin in 1821.”); Richard C. Selley, *UK Shale Gas: The Story so Far*, 31 MARINE & PETROLEUM GEOLOGY 100, 100 (2012) (“In 1821 shale gas was produced from a natural seepage in the Appalachian Mountains at Fredonia, New York.”).

<sup>32</sup> Matthew DiLallo, *Which US States Produce the Most Shale Oil?*, THE MOTLEY FOOL (March 25, 2017), <https://www.fool.com/investing/2017/03/25/which-us-states-produce-the-most-shale-oil.aspx>.

its ability to significantly minimize surface disturbance.<sup>33</sup> Through horizontal drilling, subsurface deposits of gas are accessible while utilizing fewer surface perforations than would be practicable under conventional drilling.<sup>34</sup> Apart from the Barnett and Haynesville formations that are connected to Texas, the hydrofracking process has also been deployed extensively in other parts of the country, including North Dakota, Pennsylvania, and West Virginia.<sup>35</sup>

This surprising revolution<sup>36</sup> has been accompanied by a number of thorny legal and policy issues, implicating such areas as tort liability, property rights, and international relations.<sup>37</sup> Hydraulic fracturing has tremendous potential to alter the economic and energy trajectory of the United States and the globe.<sup>38</sup> It promises to revitalize local, state, and national

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<sup>33</sup> See Emily C. Powers, *Fracking and Federalism: Support for an Adaptive Approach That Avoids the Tragedy of the Regulatory Commons*, 19 J. L. & POL'Y 913, 921 (2011).

<sup>34</sup> See *id.*

<sup>35</sup> See Sakmar, *supra* note 3, at 383; see also Inessa Abayev, *Hydraulic Fracturing Wastewater: Making the Case for Treating the Environmentally Condemned*, 24 FORDHAM ENVTL. L. REV. 275 (2012) ("Hydrofracking now occurs across Shale formations within different regions of the country from Colorado to West Virginia."); Jessica Owley & Collin Doane, *Exploiting Conservation Lands: Can Hydrofracking be Consistent with Conservation Easements?*, 66 U. KAN. L. REV. 93, 104 (2017) (discussing the economic impact of hydrofracking in North Dakota).

<sup>36</sup> See Francesco Graceva & Peter Zeniewski, *Exploring the Uncertainty Around Potential Shale Gas Development—A Global Energy System Analysis Based on TIAM (TIMES Integrated Assessment Model)*, 57 ENERGY 443, 443 (2013) (stating that shale gas development in the United States was largely unexpected); see also Technical Paper, Robert McIlvaine & Ann James, *Pumps Markets: The Potential of Shale Gas* (on file with author) ("The possibility of economically extracting gas from shale has come as something of a surprise to the energy industry.").

<sup>37</sup> See JOHN S. LOWE ET AL., *CASES AND MATERIALS ON OIL AND GAS LAW* 863 (6th ed. 2013); Corey Johnson & Tim Boersma, *Energy (In)security in Poland: The Case of Shale Gas*, 53 ENERGY POL'Y 389, 396 (2013) (discussing the geopolitical component of shale gas production); Leslie Hook, *China Seeks to Emulate U.S. Shale Gas Success*, FIN. TIMES (April 26, 2012) (stating that "[s]hale has become a key area of cooperation for the US and China . . .").

<sup>38</sup> See Christopher McGlade et al., *Methods of Estimating Shale Gas Resources—Comparison, Evaluation and Implications*, 59 ENERGY 116, 116 (2013) (discussing shale gas production's present and projected impact on American and global gas markets); see also Alhajji, *supra* note 29, at 405, 411 (exploring the undeniable impact of the shale revolution on international oil and gas trade); Graceva & Zeniewski, *supra* note 36, at 449 ("A further issue often debated is the possibility that the 'shale gas revolution' could induce structural

economies, contribute to energy security by reducing dependence on supplies from unstable and volatile regions of the world, and put substantial amounts of money into the pockets of energy corporations and landowners.<sup>39</sup> It is estimated that “oil and gas companies paid more than \$15 million in royalties to Texans across the state in 2012. That doesn’t include initial signing bonuses, which can be enormous. Houston-area oil and gas heir Daniel Harrison III collected \$1 billion in cash in 2013 when Shell Oil Co. leased his 100,000-acre ranch in the Eagle Ford.”<sup>40</sup> Fracking has been such a huge success in the United States that other countries are gearing up to replicate it.<sup>41</sup> As many countries participate in this journey, shale gas can play a key role in achieving the laudable global goal of sustainable development.<sup>42</sup> Professor Meghan O’Sullivan of Harvard University’s Kennedy School captured the gains in a recent opinion piece in the New York Times as follows:

Thanks largely to fracking—hydraulic fracturing of rock—the United States is now the largest producer of oil and gas combined in the world. America consumes large quantities of energy, so this expanded production has not yet made the country energy independent. But it has greatly decreased its

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changes in global trade, by prompting a redirection of gas flows, penalizing some exporting regions while benefiting others.”).

<sup>39</sup> See Benjamin L. McCready, *Like It or Not, You’re Fracked: Why State Preemption of Municipal Bans Are Unjustified in the Fracking Context*, 9 DREXEL L. REV. ONLINE 61, 66–68 (2017) (analyzing the economic and energy gains and pains of fracking); see also Apple, *supra* note 22, at 229–230; Alexander T. Maur, *Let’s Not Frack This Up: State-Based Solutions for the Regulation of Hydraulic Fracturing and the Disposal of Flowback Water*, 48 SUFFOLK U. L. REV. 151, 155 (2015).

<sup>40</sup> Priscila Mosqueda, *The Holdouts*, TEX. OBSERVER (Feb. 16, 2015), <https://www.texasobserver.org/the-holdouts-three-texas-families-refused-sell-mineral-rights-fracking/>.

<sup>41</sup> See Alan Krupnick et al., *Environmental Risks of Shale Gas Development in China*, 75 ENERGY POL’Y 117, 117 (2014) (“Rapid and low-cost development of shale gas resources in the United States and its concomitant effects on reducing natural gas prices, stimulating industrial activity from natural gas users and replacing coal with natural gas to generate electricity, have many countries in the world looking to the development of their own shale gas resources.”); see also Juan Roberto Lozano Maya, *The United States Experience as a Reference of Success for Shale Gas Development: The Case of Mexico*, 62 ENERGY POL’Y 70, 70–71 (2013).

<sup>42</sup> See Zheng Wan & Brian Craig, *Reflections on China—US Energy Cooperation: Overcoming Differences to Advance Collaboration*, 27 UTIL. POL’Y 93, 94, 97 (2013).

dependence on foreign energy: About a decade ago, the United States imported nearly two-thirds of the oil it consumed; that percentage is now closer to one-fifth. America is now the largest exporter of refined petroleum products and, in the past year, has also become an exporter of crude oil and liquefied natural gas. The benefits of this surge in production go well beyond cheaper gasoline, an improved trade balance and a stronger economy. The boom has also improved the country's sources of soft power, in part by underscoring America's enduring edge in innovation and ingenuity. The new output has forced changes in the structure of energy markets in ways that are favorable to the United States. American producers of oil from shale rock have introduced a new business model to the scene: Small investments in exploration and production can bring oil to the market quickly. This weakens OPEC, by making it more difficult for its production cuts to result in sustained increases in oil prices. For the first time in more than a century, the market determines the price of oil with much less influence from any cartel, commission or band of big oil companies. . . . The energy boom has also weakened many of America's competitors, particularly Russia, by both decreasing its revenues and reducing its ability to use its energy resources as a political cudgel. The boom also expands opportunities for the United States to forge new partnerships. For instance, given China's growing dependence, and America's waning reliance, on Middle Eastern oil, Beijing may be more likely to work with the United States to stabilize that part of the world. Such changes put America in a stronger position to reinforce the international order.<sup>43</sup>

However, fracking also presents enormous implications for the environment, democracy, and the protection of individual property rights.<sup>44</sup> Drilling could pollute underground water aquifers as

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<sup>43</sup> Meghan L. O'Sullivan, *How Trump Can Harness the U.S. Energy Boom*, N.Y. TIMES (Sept. 15, 2017), <https://www.nytimes.com/2017/09/15/opinion/trump-energy-boom.html>.

<sup>44</sup> See Christopher J. Hilson, *Litigation Against Fracking Bans and Moratoriums in the United States: Exit, Voice and Loyalty*, 40 WM. & MARY ENVTL. L. & POL'Y REV. 745, 746-47 (2016); Saby Ghoshray, *Charting the Future Trajectory for Fracking Regulation: From Environmental Democracy to Cooperative Federalism*, 38 T. MARSHALL L. REV. 199 (2013); Jinsheng Wang, David Ryan & Edward J. Anthony, *Reducing the Greenhouse Gas Footprint of Shale Gas*, 39 ENERGY POL'Y 8196 (2011) (discussing the environmental impact of methane, the principal component of shale gas, as a more powerful greenhouse gas than carbon dioxide); Rebecca W. Watson & Jennifer Cadena, *Anti-Fracking Initiatives: Power to the People or More of the Same?*, 28 NAT.

methane gas seeps through shoddy cement jobs in drilled wells and subsequently migrates into drinking water.<sup>45</sup> It should be noted, however, that this is not necessarily a fracking issue, as shoddy cement jobs on conventional (non-fracked) wells have the same risks. The use of chemicals, mixed with sand to pierce the shale rock, generate concern due to perceived health and safety risks.<sup>46</sup> Different parts of the country hosting fracking operations are already witnessing these worrisome scenarios as efforts advance toward the development of the huge shale gas deposits in various states.<sup>47</sup>

Small tract mineral owners face a number of irksome circumstances as well, ranging from the imposition of unwanted development near their residences to the risk of stealth expropriation of gas underneath their land as larger developers take advantage of existing laws to drill without accommodating their interests.<sup>48</sup> As a result, affected or interested property owners and residents in areas undergoing or considering shale gas development have engaged in acts of resistance, some of which are founded on the NIMBY phenomenon discussed below.

## II. NOT IN MY BACKYARD (NIMBY) PHENOMENON

It has become a commonplace reaction of residents in areas identified as host communities for potential industrial and controversial non-industrial projects to resist the projects they deem undesirable. This long-standing practice has also been used

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RESOURCES & ENV'T 44 (2014).

<sup>45</sup> See Blake A. Watson, *Fracking and Cracking: Strict Liability for Earthquake Damage Due to Wastewater Injection and Hydraulic Fracturing*, 11 TEX. J. OIL GAS & ENERGY L. 1, 12 n.65 (2016); see also Elizabeth Ann Glass Geltman, *Drilling for Common Ground: How Public Opinion Tracks Experts in the Debate over Federal Regulation of Shale Oil & Gas Extraction*, 35 VA. ENVTL. L.J. 59, 113 (2016).

<sup>46</sup> See Danielle Quinn, *A Fracking Fragile Issue: Courts Continue to Tiptoe around Subsurface Trespass Claims*, 27 VILL. ENVTL. L.J. 1, 30 (2016); Merrill & Schizer, *supra* note 6, at 192–94 (2013) (stating that methane has been observed to be present in water wells but noting that a causal link has not been established between methane contamination in water wells and fracking).

<sup>47</sup> See Brian G. Rahm & Susan J. Riha, *Toward Strategic Management of Shale Gas Development: Regional, Collective Impacts on Water Resources*, 17 ENVTL. SCI. & POL'Y 12, 12–13 (2012).

<sup>48</sup> See Brady Paul Behrens, *Rule 37 Exceptions and Small Mineral Tracts in Urban Areas: An Argument for Incorporating Compulsory Pooling into Special Field Rules in Texas*, 44 TEX. TECH. L. REV. 1053, 1077 (2012).

to confront fracking operations. Opponents of fracking anchor their resistance on a number of factors, including the perceived possible impact of fracking on the residential environment. Section A of this Part introduces the environmental concerns that fuel NIMBY resistance in communities facing fracking operations, while Section B closely examines the NIMBY syndrome.

#### A. *NIMBY and Environmental Concerns*

NIMBY objections are a subset of environmental objections to fracking.<sup>49</sup> Generally, environmental opposition to fracking involves two separate complaints: first, the perceived risk of pollution and other environmental consequences from fracking, and second, the NIMBY syndrome, in which residents resist efforts to site environmentally-destructive or undesirable industrial activities in their own community or neighborhood. Regarding the first complaint, fracking has been assailed for precipitating or exacerbating a host of environmental problems. Critics, commentators, and concerned citizens link fracking to earthquakes.<sup>50</sup> Water contamination is also an issue that generates panic.<sup>51</sup> This species of concerns was not a dominant theme at the

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<sup>49</sup> See Alastair R. Lucas & Donald N. Zillman, *Breaking (Not So) Bad: A Look at the World's Energy Prospects as of July 2014*, 60 ROCKY MTN. MIN. L. FOUND. 18-1, 18-25 (2014) (“Public sentiment towards unconventional development is divided. The environmental objections include both NIMBY objections to the immediate negative impacts of fracking on the surrounding territory and broader objections that enhanced supplies of oil and natural gas threaten the development of renewable energy sources or nuclear power.”).

<sup>50</sup> See David Bulgarelli, *Quaking the Foundation: Fracking-Induced Earthquakes and What to Do About Them*, 2017 U. ILL. J.L. TECH. & POL'Y 229 (2017); Monika U. Ehrman, *Earthquakes in the Oilpatch: The Regulatory and Legal Issues Arising out of Oil and Gas Operation Induced Seismicity*, 33 GA. ST. U. L. REV. 609 (2017); Kate Konschnik, *Regulating Stability: State Compensation Funds For Induced Seismicity*, 29 GEO. ENVTL. L. REV. 227 (2017).

<sup>51</sup> See Joseph Belza, *Inverse Condemnation and Fracking Disasters: Government Liability for the Environmental Consequences of Hydraulic Fracturing Under a Constitutional Takings Theory*, 44 B.C. ENVTL. AFF. L. REV. 55 (2017); Lynda L. Butler, *Property as a Management Institution*, 82 BROOK. L. REV. 1215, 1271 n.298 (2017); Matthew Jokajty, *Insuring Fracking Risk: Can Conventional Insurance Tools Manage Unconventional Risk?*, 27 NAT. RESOURCES & ENV'T 3, 3 (2013) (“Most notably is the fear that these operations could contaminate drinking water supplies with either the fluid used in fracking operations or even with natural gas—the flaming taps so vividly displayed in the movie *Gasland*.”); Alexander T. Maur, *Let's Not Frack This Up: State-Based Solutions for the Regulation of Hydraulic Fracturing and the Disposal of*

focus group and so will not receive significant attention in this Article.<sup>52</sup> Suffice it to say, however, that it is in the interest of all concerned parties to pay close attention to the environmental concerns associated with fracking. Recognition of environmental concerns and identification and implementation of proactive measures to address them are necessary for continued and peaceful development of mineral resources in urban and suburban settings.<sup>53</sup> However, this Part is focused primarily on the NIMBY phenomenon, which was featured prominently during the focus group. Section B below examines the NIMBY syndrome generally, while Section C specifically scrutinizes the NIMBY discussion in the context of fracking.

### B. *A Close Examination of the NIMBY Syndrome*

While the term NIMBY may be of a relatively recent vintage, community resistance to unwanted development projects is a long-standing phenomenon.<sup>54</sup> The NIMBY problem “is a conflict endemic to all democracies—and to any system of government that permits localities to express and exert political opposition.”<sup>55</sup>

The NIMBY phenomenon has been described by a number of

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*Flowback Water*, 48 SUFFOLK U. L. REV. 151, 156–57 (2015); Blake Watson, *Hydraulic Fracturing and Tort Litigation*, 31 PROB. & PROP. 10, 11 (2017).

<sup>52</sup> See generally Ciprian N. Radavoi, *Fenceline Communities and Environmentally Damaging Projects: An Asymptotically Evolving Right to Veto*, 29 TUL. ENVTL. L.J. 1 (2015) (discussing environment-based NIMBY opposition, especially in the context of international extractive projects).

<sup>53</sup> See Thomas L. Friedman, *Get It Right on Gas*, N.Y. TIMES (August 5, 2012), <http://www.nytimes.com/2012/08/05/opinion/sunday/friedman-get-it-right-on-gas.html>.

<sup>54</sup> See IVAN L. LONDON ET AL., BE AFRAID. BE VERY AFRAID: DEALING WITH PUBLIC PERCEPTIONS OF RISK IN OIL AND GAS DEVELOPMENT, 26-1, 26-29 (2015) (“The NIMBY concept is not new.”); Juliana Maantay, *Zoning Law, Health, And Environmental Justice: What’s The Connection?*, 30 J.L. MED. & ETHICS 572, 583 (2002) (“It has been frequently documented that at least as far back as the 1930s communities fought, and occasionally succeeded in stopping (or relocating elsewhere before construction started), such proposals as expressways, sewage treatment plants, and low-income housing projects that they were convinced would ruin their neighborhoods.”); Lamy Moosa, “*The Energy Capital Of The East Coast?*”: *Lessons Virginia Can Learn from Cape Wind Failure And European Success in Offshore Wind Energy*, 39 WM. & MARY ENVTL. L. & POL’Y REV. 713, 732 (2015) (“The NIMBY attitude is not a new phenomenon.”).

<sup>55</sup> Barak D. Richman & Christopher Boerner, *A Transaction Cost Economizing Approach to Regulation: Understanding the NIMBY Problem and Improving Regulatory Responses*, 23 YALE J. ON REG. 29, 32 (2006).

commentators as embracing a host of features, notably: opposition to a project's location to preserve economic, aesthetic, and other benefits, and to prevent environmental degradation, criminal activity, or other societal harm, with or without a scientific or factual basis for the objection.<sup>56</sup> In a nutshell, it "is a term used to describe the reaction of local homeowners who object to further development within their community, fearing that such development might reduce the market value of their homes or change the character of the community."<sup>57</sup> NIMBY resistance has been evident in several industrial operations.<sup>58</sup> It has surfaced in a

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<sup>56</sup> See Daniel R. Mandelker, *Zoning Barriers to Manufactured Housing*, 48 URB. LAW. 233, 237 (2016) ("Studies show, however, either that there is no basis for these objections, or that they are irrelevant to zoning regulation."); Benjamin L. Meersman, *You Can't Hear Me Now: The Ambiguous Language of the Telecommunications Act of 1996's Tower Siting Provision*, 39 J. CORP. L. 437, 441 (2014).

NIMBY opposition occurs when citizens of a particular geographic area want to receive the benefits of particular industry infrastructure, but do not want the physical location of such infrastructure in their immediate neighborhoods and communities. Reasons for the NIMBY argument include a potential devaluation of property, health and environmental concerns, and, often, the effect on aesthetic value, regardless of whether reliable data or proof exists.

*Id.*; see also Michael Kling, *Zoned Out: Assisted-Living Facilities and Zoning*, 10 ELDER L.J. 187, 196 (2002) (stating that common NIMBY "reactions generally fall into four categories: safety, economics, density, and neighborhood appearance."); Susan Lorde Martin, *Wind Farms and NIMBYs: Generating Conflict, Reducing Litigation*, 20 FORDHAM ENVTL. L. REV. 427, 466 (2010) (discussing NIMBY protests on the basis of aesthetics); Crystal Ndidi Ibe, *Feeding the Homeless: The Criminalization of a Humanitarian Act*, 41 T. MARSHALL L. REV. ONLINE 24 (2015) (discussing objection to a church-run homeless feeding location by neighboring residents who were concerned about crime and safety).

<sup>57</sup> Patricia E. Salkin & Ashira Pelman Ostrow, *Cooperative Federalism and Wind: A New Framework for Achieving Sustainability*, 37 HOFSTRA L. REV. 1049, 1052 (2009); see also Stanley E. Cox, *Garbage In, Garbage Out: Court Confusion About the Dormant Commerce Clause*, 50 OKLA. L. REV. 155, 168 n.35 (1997) (citing numerous sources and various definitions offered by them); Desiree C. Hensley, *Out in the Cold: The Failure of Tenant Enforcement of the Low-Income Housing Tax Credit*, 82 U. CIN. L. REV. 1079, 1087 (2014) ("Placing housing designed for use by the poor in higher-income areas often causes an outcry by the people who live there, referred to as the "NIMBY" (Not In My Back Yard) syndrome.").

<sup>58</sup> See Michael Burger, *"It's Not Easy Being Green": Local Initiatives, Preemption Problems, and the Market Participant Exception*, 78 U. CIN. L. REV. 835, 855 (2010) (stating that the NIMBY phenomenon is "typical in siting hazardous waste disposal sites and transportation routes, and other locally undesirable land uses (LULUs)."); Jason Schumacher & Jennifer Morrissey, *The Legal Landscape of "Fracking": The Oil and Gas Industry's Game-Changing*

wide range of projects, “including airports, prisons, sports stadiums, power plants, halfway houses, and low-income housing projects.”<sup>59</sup>

NIMBY campaigns are likely to arise in communities where the residents are well-informed and eager to engage the political process to achieve their objective of keeping unwanted projects from being sited in their neighborhoods.<sup>60</sup> In some cases, the rural poor may oppose industrial projects in order to preserve their way of life, while some affluent urban and suburban communities may welcome or tolerate some projects to enhance their economic wellbeing.<sup>61</sup> Some NIMBY campaigns end successfully, and news of such successful campaigns would only spur hopes of similar success in other communities.<sup>62</sup>

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*Technique is its Biggest Hurdle*, 17 TEX. REV. L. & POL. 239, 252 (2013) (stating that NIMBY issues “typically arise when heavy industry abuts residential areas.”). Apart from industrial projects, NIMBY-ism also arises in other contexts, such as siting of social service facilities, including corrections, medical or mental health facilities. See Christian C. Hagen-Frederiksen, *Beyond Fracking: How Robinson Township Alters Pennsylvania Municipal Zoning Rights*, 34 J.L. & COM. 375, 388–89 (2016).

<sup>59</sup> Richman & Boerner, *supra* note 55, at 37; see also David W. Hughes, *When NIMBYs Attack: The Heights to Which Communities Will Climb to Prevent the Siting of Wireless Towers*, 23 J. CORP. L. 469, 482–83 (1998); Christina A. Lee, *Taliaferro v. Darby Township Zoning Board: Pretextual Recognition of § 1983 Standing to Mitigate Failure To Recognize Standing Under § 1981*, 41 U.C. DAVIS L. REV. 741, 747 n.20 (2007) (noting various definitions of NIMBY to include projects considered unpleasant to the neighborhood as well as projects which engender local opposition but which some of the neighbors may not view as unwanted); Patricia Suter, *The Siting System: Theory and Reality*, 1 ALB. L. ENVTL. OUTLOOK J. 24, 24 (1995).

<sup>60</sup> See Hanna Chandoo, *With Liberty, Justice, and Contamination For All: The Unequal Distribution of Groundwater Pollution in California*, 36 WHITTIER L. REV. 307, 311 (2015); Shannon M. Roesler, *Federalism and Local Environmental Regulation*, 48 U.C. DAVIS L. REV. 1111, 1144 (2015) (stating when local communities, because of NIMBY-ism, exclude unwanted facilities “these facilities often end up in low-income and minority communities, presenting environmental justice concerns.”); Marc L. Roark, *Homelessness at the Cathedral*, 80 MO. L. REV. 53, 110 (2015) (“‘Not in My Backyard’ (‘NIMBY’) rhetoric, often tends to flow from self-appointed leaders (usually homeowners) who often have greater access, more resources, and better political inroads to advance a particular view.”); David B. Spence, *Federalism, Regulatory Lags, and the Political Economy of Energy Production*, 161 U. PA. L. REV. 431, 481 (2013) [hereinafter Spence, *Federalism*] (“In urban and presumably wealthier areas, fracking can provoke opposition from better-funded and more-sophisticated NIMBY (‘not in my backyard’) groups.”).

<sup>61</sup> See David B. Spence, *The Political Economy of Local Vetoes*, 93 TEX. L. REV. 351, 378 n.129 (2014) [hereinafter Spence, *Political Economy*].

<sup>62</sup> See Spence, *Federalism*, *supra* note 60, at 481 (“When fracking meets

Although the sobriquet “NIMBY” has apparently morphed into a pejorative appellation, NIMBY campaigns present some benefits, including drawing attention to negative facets of a project and inviting a reconsideration that could result in improved or optimal outcomes.<sup>63</sup> However, it is not without its own problems.<sup>64</sup> The NIMBY veto can come with enormous costs.<sup>65</sup> The prominent problem is that resorting to NIMBY could result in the termination or prevention of worthwhile projects.<sup>66</sup> A veritable challenge presented by NIMBY campaigns is that while the fear expressed about a project may be real, the concerns are often exaggerated,

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political resistance, elected local government leaders may respond with ordinances banning or restricting fracking. The City Council of Pittsburgh passed an ordinance banning fracking within the city limits in late 2010, 239 and other communities within the Marcellus Shale and beyond have taken similar actions.”) (citations omitted).

<sup>63</sup> See Donna R. Christie, *Lead, Follow, or Be Left Behind: The Case for Comprehensive Ocean Policy and Planning for Florida*, 44 STETSON L. REV. 335, 354 n.128 (2015) (stating that NIMBY “is a generally pejorative term used to describe individuals that oppose development that may benefit the larger community at the expense of local property interests”); John D. Echeverria, *The Costs of Koontz*, 39 VT. L. REV. 573, 604 (2015) (arguing in favor of homeowners who seek to keep away negative externalities from their neighborhood and objecting to the use of the term NIMBY to describe them, viewing it as a pejorative); Hannah Treppa, *Not a Huge Fan: Deterring the Implementation of Wind Turbines in the Great Lakes*, 93 U. DET. MERCY L. REV. 321, 339–41 (2016).

<sup>64</sup> See Alice Kaswan, *Distributive Justice and the Environment*, 81 N.C. L. REV. 1031, 1088 (2003) (“Communities who cry NIMBY are often considered selfish, short-sighted, and an obstacle to providing needed social services and other necessary but undesirable land uses.”); see also Steve P. Calandrillo et al., *Making “Smart Growth” Smarter*, 83 GEO. WASH. L. REV. 829, 872–874 (2015); Gregory D. Eriksen, *Breaking Wind, Fixing Wind: Facilitating Wind Energy Development in New York State*, 60 SYRACUSE L. REV. 189, 197 (2009); Clifford Rechtchaffen et al., ENVIRONMENTAL JUSTICE: LAW, POLICY & REGULATION 76–77, 98–99, 167–69 (2d ed. 2009) (presenting excerpts that discuss the “NIMBY problem” or the negative effects of the NIMBY phenomenon).

<sup>65</sup> See Michael Lewyn, *Deny, Deny, Deny*, 44 REAL EST. L.J. 558, 558 (2016) (“Academic economists often assert that the NIMBY veto raises housing prices, based on the law of supply and demand: less housing supply means higher housing prices.”); Michael Lewyn, *The Roots of Expensive Zoning*, 45 REAL EST. L.J. 256, 261 (2016) (discussing how NIMBY power has increased over the years thereby affecting development and availability of housing) [hereinafter Lewyn, *Zoning*].

<sup>66</sup> See Hannah J. Wiseman, *Disaggregating Preemption in Energy Law*, 40 HARV. ENVTL. L. REV. 293, 315 (2016) (addressing the point that NIMBY concerns could stymie needed development); see also A. Mechele Dickerson, *Revitalizing Urban Cities: Linking the Past to the Present*, 46 U. MEM. L. REV. 973, 985–86 (2016); Ashira Pelman Ostrow, *Grid Governance: The Role of a National Network Coordinator*, 35 CARDOZO L. REV. 1993, 2022–23 (2014).

and a project may be scuttled when its termination is not necessarily warranted.<sup>67</sup> Affluent and politically savvy communities are able to utilize those campaigns to promote their own interest, ensuring continued protection of their property values and scenery,<sup>68</sup> even when society at large loses and more lives are imperiled.<sup>69</sup> Some scholars capture the frustration in the following words: “Under ordinary political conditions, necessary reforms and changes can be bogged down by gridlock, regulatory capture, or destructive ‘NIMBY-ism.’ Neighborhoods can remain blighted or . . . ‘unbuilt because of disagreement over who will

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<sup>67</sup> See David B. Spence, *Responsible Shale Gas Production: Moral Outrage vs. Cool Analysis*, 25 *FORDHAM ENVTL. L. REV.* 141, 183 (2013); see also Warren L. Ratliff, *The De-Evolution of Environmental Organization*, 17 *J. LAND RESOURCES & ENVTL. L.* 45, 67 (1997) (stating that threats posed by opposed projects are often overestimated).

<sup>68</sup> See Matthew J. McGowan, *Location, Location, Mis-Location: How Local Land Use Restrictions Are Dulling Halfway Housing’s Criminal Rehabilitation Potential*, 48 *URB. LAW.* 329, 347–49 (2016); see also Catherine Durkin, *The Exclusionary Effect of “Mansionization”: Area Variances Undermine Efforts to Achieve Housing Affordability*, 55 *CATH. U. L. REV.* 439, 449 n.81 (2006); Peter Johnsen, *Public Utility Zoning Post-Robinson Township: A Constitutional End-Around or Infrastructure Imperative?*, 8 *DREXEL L. REV. ONLINE* 41, 68 (2015) (“The downside of this outcome, of course, is that the concerns of a regimented minority may impede sustainable, worthwhile development.”); Ashira Pelman Ostrow, *Land Law Federalism*, 61 *EMORY L.J.* 1397, 1412 (2012) (“Where the local land-use process is dominated by NIMBY sentiment (as is the case in many elite suburban communities), local residents have the economic incentive and legal authority to exclude undesirable developments, without regard for the impact on regional or national land-use priorities.”).

<sup>69</sup> See Rich Pepper, *Batteries and State Law: A Glimpse of the Future in the Lone Star State*, 16 *N.C. J.L. & TECH. ON.* 269, 288 (2015) (“Not-In-My-Backyard (‘NIMBY’) attitudes thus prevent transmission capacity from keeping up with new generation capacity. This hurts not only the state in which the decision was made, but also the entire surrounding region using the same grid.”); Camille Rorer, *Can You See Me Now? The Struggle Between Cellular Towers and NIMBY*, 19 *J. NAT. RESOURCES & ENVTL. L.* 213, 214 (2004) (“Although one can easily sympathize with the concerns of the individuals who are forced to be in close proximity to the cell towers, one problem with NIMBY is that it can prevent the placement of enough towers to ensure health, safety, and cellular communication for the community at large.”); Lawrence Susskind & Ryan Cook, *The Cost of Contentiousness: A Status Report on Offshore Wind in the Eastern United States*, 33 *VA. ENVTL. L.J.* 204, 248 (2015) (describing how NIMBY opposition led to the cancellation of offshore wind projects that state agencies in New York attempted to pursue with a private developer); Peter P. Swire, *The Race to Laxity and the Race to Undesirability: Explaining Failures in Competition Among Jurisdictions in Environmental Law*, 14 *YALE J. ON REG.* 67, 71 (1996) (“NIMBY effects can be so powerful that they prevent the siting of facilities even where the total benefits exceed the total costs.”).

bear the immediate costs of solving the problem.”<sup>70</sup> Moreover, in some cases, even the protesting community might lose out if the project is not executed.<sup>71</sup>

### C. Fracking and the NIMBY Syndrome

Energy projects, regardless of type or stripe, tend to be magnets for NIMBY resistance.<sup>72</sup> Not surprisingly, therefore, the NIMBY syndrome has made its way into fracking decisions, such as site selection.<sup>73</sup> Fracking has started attracting NIMBY-based lawsuits in some places, including Texas, Pennsylvania, and Arkansas.<sup>74</sup> Fracking’s impact on a neighborhood spans multiple phases of the exploration and production processes, ranging from

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<sup>70</sup> Daniel E. Rauch & David Schleicher, *Like Uber, but for Local Government Law: The Future of Local Regulation of the Sharing Economy*, 76 OHIO ST. L.J. 901, 947 (2015).

<sup>71</sup> See Mark Wilson, *Organizational Sustainability: A Self-Help Housing Corporation’s Recipe for Success*, 40 REAL EST. REV. J. 5 (2011) (“In truth, properly maintained affordable housing developments designed and built with sensitivity to the architectural and aesthetic standards desired by the community, may even increase property values and enhance community stability.”).

<sup>72</sup> David A. Lewis, *Identifying and Avoiding Conflicts Between Historic Preservation and the Development of Renewable Energy*, 22 N.Y.U. ENVTL. L.J. 274, 279 (2015) (noting that conventional power projects, such as coal and nuclear power plants, and renewable energy projects are often viewed as unwelcome neighbors); Daniel A. Lyons, *Federalism and the Rise of Renewable Energy: Preserving State and Local Voices in the Green Energy Revolution*, 64 CASE W. RES. L. REV. 1619, 1634 (2014) (“Although some communities welcome the investment, jobs, and lease payments that wind farms bring to a local community, these projects often face significant hurdles and fierce opposition.”).

<sup>73</sup> See Erik Lange, *Local Control of Emerging Energy Sources: A Due Process Challenge to Disparate Treatment by States*, 64 CASE W. RES. L. REV. 619, 686 (2013) (stating that neighbors of fracking sites have NIMBY concerns); Schumacher & Morrissey, *supra* note 58, at 243 (stating that among the major issues facing fracking are those “stemming from balancing state economic development with NIMBY (‘not in my back yard’) opposition to that development”); Jesse J. Richardson, Jr., *Local Regulation of Hydraulic Fracturing*, 117 W. VA. L. REV. 593, 605 (2014) (analogizing opposition of hydraulic fracturing by nearby residents to NIMBY opposition to cellular towers); see generally Joshua P. Fershee, *Facts, Fiction, and Perception in Hydraulic Fracturing: Illuminating Act 13 and Robinson Township v. Commonwealth of Pennsylvania*, 116 W. VA. L. REV. 819 (2014).

<sup>74</sup> See LEWIS BASS & THOMAS PARKER REDICK, PRODUCTS LIABILITY: DESIGN AND MANUFACTURING DEFECTS § 24:14 (2017) (“Litigation over environmental impacts, including property damage, has been filed and will continue to be filed, as the fracking industry attracts negative attention and becomes the latest ‘not in my backyard’ (NIMBY) phenomenon to attract litigation.”).

preparation of the drilling site, “completion of the fracking job,” and production of the oil and gas.<sup>75</sup> Fracking activities also generate noise and orchestrate social disruption.<sup>76</sup> Activities related to fracking, including the operation of trucks and other heavy equipment, building of new roads, and construction of drill pads and gathering lines “affect the immediate area and effect air emissions, odors, noise, spill risk, land use, wildlife, and the general life styles of these communities.”<sup>77</sup>

Communities hosting or near fracking operations are understandably concerned about the impact of fracking on their way of life. Indeed, oil and gas operations present an attractive atmosphere for the NIMBY phenomenon for a variety of reasons.<sup>78</sup> Residents of communities hosting petroleum exploration and development projects may rightly view themselves as bearing the burden of providing a needed resource, while the benefits are enjoyed by numerous people in diverse places.<sup>79</sup> Further, the neighbors’ concerns go beyond aesthetics to include risks associated with the oil and gas industry.<sup>80</sup> Moreover, the oil industry endures a bad reputation and public image,<sup>81</sup> making it easier for communities to distance themselves from it either because they share those opinions of the industry or would not want to be identified with an industry laboring under that negative perception.

When a segment of the population in a particular area would be the prime beneficiary of a project in that area, neighbors who would not receive any or nearly the same level of benefits, while bearing a sizeable amount of burden from the development, are likely to oppose the project using the NIMBY argument as a tool. This scenario plays out particularly well in the case of fracking: “Other land owners watch neighbors uncover incredible riches, but sit frustrated on land without extractable shale; neighbors can bear the burdens of construction and development without being able to

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<sup>75</sup> Spence, *Federalism*, *supra* note 60, at 480.

<sup>76</sup> *See id.* at 481.

<sup>77</sup> Joseph P. Tomain, *Shale Gas and Clean Energy Policy*, 63 CASE W. RES. L. REV. 1187, 1211 (2013).

<sup>78</sup> *See* London et al., *supra* note 54, at 26–30.

<sup>79</sup> *See id.*

<sup>80</sup> *Id.*

<sup>81</sup> *See id.*; Asche et al., *supra* note 20, at 119; Ruud Weijermars, *Economic Appraisal of Shale Gas Plays in Continental Europe*, 106 APPLIED ENERGY 100, 109 (2013) (referencing the “fear of negative press from shale gas critics”).

cash in on the profits.”<sup>82</sup>

Similarly, the NIMBY syndrome is further complicated by the possible separation of surface and mineral ownership, which is a feature of the U.S. oil and gas legal regime.<sup>83</sup> Where surface and mineral estates are held by different owners, surface owners who would receive minimal or no benefit from oil and gas production are not likely to be enamored of the development of the minerals, with the attendant negative effects on their property.<sup>84</sup> This problem is exacerbated in residential cases, where economic and psychological ties to a person’s home, coupled with safety and environmental concerns, would propel surface owners toward NIMBY-ism.<sup>85</sup>

As stated in Section B of this Part, NIMBY protests may sideline projects that could have real benefits to the subject community. This outcome can be observed in fracking projects.

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<sup>82</sup> Geltman, *supra* note 45, at 62.

<sup>83</sup> See ALEXANDRA B. KLASS & HANNAH J. WISEMAN, ENERGY LAW 54 (2017) (“[T]he mineral portion of a property may be severed from the surface and sold separately, and minerals in many states have been severed from the surface.”).

<sup>84</sup> See Bradford C. Berge, *Access and Surface Use Within Units and Communitized Areas*, in FEDERAL ONSHORE OIL & GAS POOLING AND UNITIZATION 13-1–13-2 (Rocky Mtn. Min. L. Found. 2014):

Landowners naturally believe that they own their land, and they don’t always welcome to [sic] drilling crews, lease operators, rigs, wells and equipment, with open arms. . . . Surface owners, and particularly those who have no mineral rights, may not see a benefit in roads or pipelines across their land, particularly when the roads and equipment are for operations on adjoining or nearby land.

*Id.*; Victoria M. Scozzaro, *Home-Rule Hope: A Community Guide to Keeping Hydraulic Fracturing Off Local Property*, 18 VT. J. ENVTL. L. 84, 86 (2016).

<sup>85</sup> See Michael N. Widener, *Land Use Consultations Advancing Therapeutic Jurisprudence: Ripe for Clinical Trials*, 18 CARDOZO J. CONFLICT RESOL. 85, 91 n.28 (2016); Michael J. Mazzone, *Changing Times Bring Conflict With Surface Owners*, AM. OIL & GAS REP. (Dec. 2011), <http://www.aogr.com/web-exclusives/exclusive-story/changing-times-bring-conflict-with-surface-owners> (discussing disruption engendered by the separation of surface and mineral ownership and highlighting challenges encountered in a neighborhood where a landowner that chooses to lease his land experiences near-violent attacks from neighbors opposed to the lease); See generally Steven J. Eagle, *Wireless Telecommunications, Infrastructure Security, And The NIMBY Problem*, 54 CATH. U. L. REV. 445, 455 (2005) (“The NIMBY (not in my back yard) syndrome reflects the fact that owner-occupied housing is the most valuable asset that the vast majority of people ever will own and their rational belief that deterioration in the neighborhood will affect its value.”); Joshua P. Fershee & S. Alex Shay, *Horizontal Drilling, Vertical Problems: Property Law Challenges from the Marcellus Shale Boom*, 49 J. MARSHALL L. REV. 413, 417–18 (2015).

For instance, while fracking may diminish property values in some places, it is also the case that the prospect of fracking can increase land values in the area.<sup>86</sup> The benefits extend to other properties and businesses beyond lands that contain oil and gas deposits, such as hotels and restaurants.<sup>87</sup> Indeed, the expectation of a ban or moratorium on fracking can hurt land values in areas sitting on shale gas.<sup>88</sup>

In general, more affluent communities with high property values would object to fracking and therefore reject lease offers by oil and gas companies.<sup>89</sup> However, while some communities, particularly in urban and suburban areas, may be averse to the siting of fracking projects in their area, other communities may welcome the projects, particularly considering that some of these communities, especially those in the rural areas, tend to be resource-based economies.<sup>90</sup> Such economies would be more welcoming of resource development projects,<sup>91</sup> and because their

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<sup>86</sup> See Geltman, *supra* note 45, at 62 (“Some subsistence farmers and poor rural dwellers sitting above energy rich shale watch the price of previously low-value land skyrocket.”).

<sup>87</sup> See Lucija Muehlenbachs et al., *The Housing Market Impacts of Shale Gas Development*, 105 AM. ECON. REV. 3633, 3656–57 (2015) (finding that shale gas development can have both detrimental and beneficial effects on home values); see also Geltman, *supra* note 45, at 62–63 (“Oil and gas extraction from shale is a heavy industry involving extensive use of machinery that can negatively impact activities and adjacent property uses like bed and breakfasts, luxury resorts, and camps.”).

<sup>88</sup> See ALAN J. KRUPNICK & ISABEL ECHARTE, RESOURCES FOR THE FUTURE, HOUSING MARKET IMPACTS OF UNCONVENTIONAL OIL AND GAS DEVELOPMENT 15 (2017) (“Analyzing properties within 5 miles of the [New York] border from 2006 to 2012 (during which the state announced a moratorium on fracking), the authors [of one study] found a 23 percent drop in housing prices following the announcement of the moratorium. The authors argue that this large result reflects a change in expectations of the potential for income from shale leases and royalties following the moratorium.”).

<sup>89</sup> See Rosalie D. Morgan, *What The Frack?: An Empirical Analysis of The Effect of Regulation on Hydraulic Fracturing*, 16 QUINNIPIAC HEALTH L.J. 77, 108 (2013) (“As property values increase, the incentive for a property owner to enter a lease for a well site will likely diminish. This phenomenon is explained through the Not in My Backyard (NIMBY) principle.”).

<sup>90</sup> See Adam Garnezy, *Balancing Hydraulic Fracturing’s Environmental and Economic Impacts: The Need for a Comprehensive Federal Baseline and the Provision of Local Rights*, 23 DUKE ENVTL. L. & POL’Y F. 405, 436–37 (2013); Emily C. Powers, *Fracking and Federalism: Support for an Adaptive Approach that Avoids the Tragedy of the Regulatory Commons*, 19 J.L. & POL’Y 913, 946 n.204 (2011) (noting that the bulk of production through fracking would occur in rural areas).

<sup>91</sup> In essence, lack of familiarity with oil and gas development could spur

populations are less dense, the consequences of additional air or water pollution from fracking would be less dire.<sup>92</sup> In that situation, the quantity of oil and gas produced and made available for societal use is not necessarily diminished.<sup>93</sup> Yet it raises a separate set of problems when opposed projects, in response to NIMBY protests, are moved from affluent neighborhoods to low income, less politically sophisticated and vulnerable communities who then face all the negative consequences of these projects.<sup>94</sup> Unlike their more prosperous counterparts, many members of these communities feel trapped,<sup>95</sup> unable to afford the costs of relocation.<sup>96</sup> The next Part examines the NIMBY-based objections

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NIMBY-ism, while the opposite result is also likely where residents have long been exposed to oil and gas operations. See Olga Schenk et al., *Unconventional Gas Development in the U.S. States: Exploring the Variation*, 5 EUR. J. RISK REG. 436, 453 (2014) (“Indeed, the increase of opposition toward fracking in parts of Colorado may be related to the growth of residents who recently moved to Colorado from other states where oil and gas development is not prevalent or familiar.”).

<sup>92</sup> See Garmezy, *supra* note 90, at 436–37.

<sup>93</sup> See *id.* at 437.

<sup>94</sup> See Leslie Ann Coleman, *It’s the Thought that Counts: The Intent Requirement in Environmental Racism Claims*, 25 ST. MARY’S L.J. 447, 476–78 (1993); Michael B. Gerrard, *The Victims of NIMBY*, 21 FORDHAM URB. L.J. 495, 495–96 (1994); Jordan Jackson, *No E-Wasteland for Electronic Waste Disposal: Effective Legislation to Protect Communities Surrounding Landfills*, 18 J. GENDER RACE & JUST. 499, 519–20 (2016); Alice Kaswan, *Environmental Justice: Bridging the Gap Between Environmental Laws and “Justice”*, 47 AM. U. L. REV. 221, 272 (1997) (restating the contention of environmental justice scholars that the result of NIMBY campaigns “is that the environmentally undesirable facilities that white and affluent residents have successfully resisted are instead sited in poor or minority neighborhoods. These neighborhoods have fewer financial or professional resources to oppose the facilities in question and may not be accustomed to organizing around environmental principles”).

<sup>95</sup> See Amanda Skalski, *Regulating Hydraulic Fracturing in Michigan: The Protection of Our Waters and Our People Hits Another Roadblock*, 14 J.L. SOC’Y 277, 300–01 (2013); see also Richard V. Hout et al., *Report of the Subcommittee on Land Use and Solid Waste*, 23 URB. LAW 753, 756 (1991) (“The public is genuinely concerned about impact of pollution on the quality of life, and its effect on property values. The public is also concerned by increased efforts to exploit political weaknesses such as efforts to site disposal facilities in poor areas.”) (citations omitted); Rebecca Ewing, *Pipeline Companies Target Small Farmers and Use Eminent Domain for Private Gain*, 38 N.C. CENT. L. REV. 125, 135 (2016) (“[M]arginalized communities often are forced to bear the burden of projects that most property owners would reject, since they lack the resources to fight such unwanted uses of their lands.”).

<sup>96</sup> . See Vicki Been, *Locally Undesirable Land Uses in Minority Neighborhoods: Disproportionate Siting or Market Dynamics?*, 103 YALE L.J. 1383, 1388 (1994) (stating that “an undesirable land use may cause *those who*

of some residents in the Dallas-Fort Worth- Arlington area.

### III. FOCUS GROUP PARTICIPANTS AND THE NIMBY SYNDROME

As the foregoing discussion in Part I reveals, suburban and urban residents resist the use of fracking to produce oil and gas in their neighborhood, the same way they resist the siting of other unsightly or potentially harmful industrial projects in their area.<sup>97</sup> The NIMBY posture stems from residents' concerns about "increases in traffic volume, dust, and noise" resulting from drilling of wells and fracking for shale gas.<sup>98</sup> Community members may also not want fracking operations in their area because they are concerned that fracking may lead to unwanted seismic activity and earthquakes.<sup>99</sup> NIMBY may also be driven by questions about the effect of the proposed activity on property values.<sup>100</sup> Residents opposed to fracking view it as a catalyst for a drop in home prices in the area that shale gas is produced.<sup>101</sup> Focus group participants expressed particular concerns they have with fracking, as discussed in this Part.

#### A. Mineral Owners' Complaint

Gary Hogan, a leading local activist who heads a non-profit organization kicked off discussions at the focus group by highlighting, among other things, the environmental concerns of residents regarding fracking in their neighborhood. He made the following observation:

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*can afford to move to become dissatisfied and leave the neighborhood"* (emphasis added)); Lynn E. Blais, *Environmental Racism Reconsidered*, 75 N.C. L. REV. 75, 118–120 (1996) (discussing non-economic factors, such as racial discrimination, that constrain the ability of some residents to move out of locations hosting undesirable industrial facilities).

<sup>97</sup> See Part II Section C, *supra*; see also LEWIS BASS & THOMAS PARKER REDICK, PRODUCTS LIABILITY: DESIGN AND MANUFACTURING DEFECTS 2d §§ 24:14 (identifying fracking as "the latest 'not in my backyard' (NIMBY) phenomenon to attract litigation").

<sup>98</sup> See Lange, *supra* note 73, at 687.

<sup>99</sup> See *id.*

<sup>100</sup> See Johnsen, *supra* note 69, at 49.

<sup>101</sup> See Kevin J. Lynch, *Regulation of Fracking Is Not a Taking of Private Property*, 84 U. CIN. L. REV. 39, 45 (2016); Alex Ritchie, *Fracking in Louisiana: The Missing Process/Land Use Distinction in State Preemption and Opportunities for Local Participation*, 76 LA. L. REV. 809, 810 (2016) ("Particularly in urban or suburban areas, voters may also perceive drilling and fracking as a threat to property values, aesthetics, and lifestyles.").

From about 2005 to 2008, I have been called out and have worked with different neighborhood groups throughout Fort Worth trying to deal with and address the issues of leasing. Do you want to lease? Do you not want to lease? And if we're going to do this in a dense, populated area, how are we going to do this so it isn't going to impact people's property values, their quality of life. . .all those sorts of issues. And of course that went on from 'what about air quality?' 'What about water quality?' 'What about water sustainability in our area?'<sup>102</sup>

A retired lawyer in the focus group, Ben Procter, took umbrage at the disposition of the oil and gas companies toward respect for the privacy of property owners and their ability to enjoy their property with minimal distraction from oil and gas operations. Referring to the practices of a particular energy company that had come into their neighborhood, he said:

[T]hey had a lease for people to sign that looked like it had come right out the ranch country. It was called Producers 88. I found out about what a Producers 88 lease is. The first paragraph of the lease was long: 7 or 8 sentences were what you would call a run-on sentence. It just went on and on and on. And in the first sentence, it took away the surface rights of anybody signing the lease. Meaning that if you were in a suburb or in the city, they were able to put tanks, run lines, and even drill right on the surface of your property. They were droves of people in my neighborhood signing the lease because of the \$300-\$400 dollars and they didn't even read the lease. It was right at the top and very clear. The landman would say "oh we would never do that. It's going to be in a drill site half a mile away. You'll never see or hear it." But in the very first paragraph of the lease, it explicitly took all surface rights away from them. It didn't mean they didn't own the surface, it meant whatever the company wanted to do, and they could come in and do it. And so based on that, I started talking to a few people around the neighborhood and I said "we can't let this happen. They could put a well right here." We have some large, a semi-rural neighborhood in which you have houses that may have half an acre or an acre associated with them. And they could line up 10 to 12 people in the block and decide to put a drilling rig right there. And they would have a right because all these

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<sup>102</sup> Transcript, Emeka Duruigbo, Professor, Tex. S. Univ., Focus Group on Fracking (Apr. 5, 2013) [hereinafter Duruigbo, Focus Group Transcript] (on file with author).

people would have signed.<sup>103</sup>

It is not unusual for the law and the parties' contract to grant the lessee an easement to use the surface estate to assess and produce minerals.<sup>104</sup> However, in a residential area, prudence counsels the adoption of cautionary measures and methods that limit interaction with residential structures. The law has also devised a mechanism for handling some of the conflicts between surface use and mineral development in the form of the Accommodation Doctrine.<sup>105</sup> Under this doctrine, a mineral owner or lessee is required to accommodate a surface owner's preexisting use of the surface if there are reasonable alternatives on the leased premises that the lessee could adopt instead of disturbing the prior use.<sup>106</sup> While the application of the doctrine in Texas is restricted to reasonable alternatives within the leased premises, a lessee need not so restrict itself. That is, a lessee may choose to accommodate a surface owner's pre-existing use by employing reasonable alternatives that exist outside of the leased premises, such as using a water well in an adjoining property, even though doing so may end up imposing additional costs on the lessee.

Another focus group participant, Dianna Flanigan, expressed a similar concern about allowing such consequential industrial operations in the neighborhood, influenced by her experience in her younger days living outside of Texas. She put the concern in the following manner:

I moved to the neighborhood I live in because it's quiet and we have a canal and it runs into a dam and it's just a lovely place to live. Except with all the drilling. I grew up in Louisiana and I saw firsthand what messes the oil company leaves. For example, Oil City, Louisiana is a horrible place to even visit after you see the damage the oil fields have left from 50 to 60 years ago. The whole city smells like sulfur and there's no telling what has been dumped there and other places in

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<sup>103</sup> *Id.*

<sup>104</sup> OWEN L. ANDERSON ET AL., OIL GAS LAW AND TAXATION 199 (4th ed. 2017) ("In addition to the various easements to enter the leased land to do things, [the lease granting clause] includes the right to produce and take oil and gas from the leased land.").

<sup>105</sup> See, e.g., *Hunt Oil Co. v. Kerbaugh*, 283 N.W.2d 131 (N.D. 1979); *Getty Oil Co. v. Jones*, 470 S.W.2d 618 (Tex. 1971).

<sup>106</sup> See *Sun Oil Co. v. Whitaker*, 483 S.W.2d 808, 812 (Tex. 1972) (discussing application when "there are reasonable alternative methods that may be employed by the lessee . . ."); *Getty Oil Co.*, 470 S.W.2d at 618.

Louisiana. So I try to get some of my neighbors and told them, we don't really need to do this. What advantages is it to us? Do we really need the 20 dollars we're going to get each month? Aren't you concerned about what it's going to do the value? Nobody is interested. They didn't care what it does to the water or anything. Anyway, so I felt mad that they threw our mineral rights away.<sup>107</sup>

Greg Hughes, a focus group participant who has a professional background as a systems engineer in the aeronautical industry, raised safety concerns, contrasting the safety expectations of gas drilling companies with requirements for aircraft manufacturers.<sup>108</sup> Mr. Hughes repeated these sentiments in a later interview granted to a Texas newspaper, which reported: "Hughes isn't against oil and gas development or even fracking. His position reflects his professional interest in risk reduction: He believes the industry hasn't tried hard enough to make fracking safe in densely populated areas."<sup>109</sup>

The NIMBY-based objections at the focus group reflect the general attitude of many Texas residents confronted with the choice of allowing the intrusion that comes with fracking close to their homes or retaining their lifestyles and avoiding such disturbance at a significant economic cost.<sup>110</sup>

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<sup>107</sup> Duruigbo, Focus Group Transcript, *supra* note 102.

<sup>108</sup> *See id.*

<sup>109</sup> Mosqueda, *supra* note 40.

<sup>110</sup> *See* Richard J. Roddewig & W. James Hughes, *Underbalanced Drilling: Can it Solve the Economic, Environmental and Regulatory Taking Problems Associated with Fracking?*, 49 J. MARSHALL L. REV. 511 (2015);

In suburban areas of Dallas and some other Texas cities, the central concern of neighborhood groups is often the "aesthetics" of fracking operations and the land use conflicts created by "industrialized" oil and gas operations in or adjacent to residential neighborhoods. Oil and gas leases and/or deeds separating the mineral estate from the surface estate created decades ago often established the right to drill and extract in areas later zoned for residential use. Odors, truck traffic, noise, and lights—oil and gas drilling often proceeds all day and night—have been a principal cause of opposition in many Texas locales. For example in Denton, Texas, which enacted a ban on fracking in November of 2014, the Houston Chronicle reported the root cause as follows: What set off residents in Denton, more than anything else, was wells drilled too close to homes and a city park. They objected to the noise and the smells and the traffic congestion that comes with drilling projects. In many ways, this is the ultimate NIMBY case.

*Id.* at 527 (citations omitted).

### B. *Response to Complaints*

The fear of fracking and NIMBY-fueled objections have ignited a push for local legislation to ban the technique or severely regulate its application in some places.<sup>111</sup> In some of these places, renewable energy projects may receive favorable treatment by regulators and scholars even in the face of NIMBY opposition to these projects.<sup>112</sup> On the other hand, fracking may get better treatment in some places than renewable energy, such as wind. For example, Ohio preempted local government control of fracking but left sufficient room for local governments to control wind-power generation.<sup>113</sup> The economics of significant tax dollars flowing into the state treasury may explain this development. An obvious explanation for the anti-fracking differential standards would be that the proponents and residents are more comfortable with renewable energy, while they have little sympathy for continued production of fossil fuels on environmental grounds. Viewed from that perspective, it would appear that the problem is less with NIMBY and more about opposition to carbon-based energy policy. Interestingly, that point provides a basis for fracking proponents to defeat NIMBY-framed policy objections since the case for continued reliance on natural gas is strong, even among those who favor a transition to renewable energy, based on the understanding that the transition may take a few decades to fully materialize.<sup>114</sup>

NIMBY concerns should not be dismissed with a wave of the hand.<sup>115</sup> Where the threat is credible and backed by convincing

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<sup>111</sup> See Lange, *supra* note 73, at 687; see generally Kristen van de Biezenbos, *Where Oil is King*, 85 FORDHAM L. REV. 1631 (2017) (discussing limits on fracking by many cities and towns through local bans, moratoria and regulation); Christopher J. Hilson, *Litigation Against Fracking Bans and Moratoriums in the United States: Exit, Voice and Loyalty*, 40 WM. & MARY ENVTL. L. & POL'Y REV. 745 (2016).

<sup>112</sup> See Uma Outka, *Intrastate Preemption in the Shifting Energy Sector*, 86 U. COLO. L. REV. 927, 980–81 (2015).

<sup>113</sup> See Lange, *supra* note 73, at 687 (stating that the “NIMBY concerns associated with fracking and wind turbines do not support drastically different preemptive approaches that states like Ohio have taken between the two sources”).

<sup>114</sup> See Janie Castle, *Change Comes to Appalachia: How Appalachia Can Prepare for Coming Carbon Regulation*, 3 APPALACHIAN NAT. RESOURCES L.J. 145, 161 (2008–09); Richard J. Pierce, Jr., *Natural Gas: A Long Bridge to a Promising Destination*, 32 UTAH ENVTL. L. REV. 245, 245 (2012).

<sup>115</sup> See Sean F. Nolon, *Negotiating the Wind: A Framework to Engage Citizens in Siting Wind Turbines*, 12 CARDOZO J. CONFLICT RESOL. 327, 331 (2011) (arguing against “[s]imply dismissing citizen opposition as self-

evidence, a project should not proceed at all, and if it must proceed, it should not be in a neighborhood that makes the danger most probable. Regardless of the setting, securing the community's buy-in is critical.<sup>116</sup> Where the concern is with housing values, adequate tools such as home equity insurance and housing partnerships can be developed and deployed to protect property owners from loss of value of their assets.<sup>117</sup> It is possible to devise a mutually beneficial system in which virtually everybody benefits from important projects, including those focused on mineral development.<sup>118</sup> For instance, considerably increasing the royalty offers for developing the neighborhoods beyond what is normally offered in places where NIMBY-ism would lead to a socially inefficient outcome should be considered.<sup>119</sup> Each NIMBY

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interested, NIMBY whiners . . .”).

<sup>116</sup> See Rachael E. Salcido, *Rationing Environmental Law in a Time Of Climate Change*, 46 LOY. U. CHI. L.J. 617, 665–66 (2015) (“Following the rationale that securing buy-in and support would pave the way to speedier project siting, developers were caught off guard at local resistance to projects that met agreed-upon best practices.”).

<sup>117</sup> See William A. Fischel, *Voting, Risk Aversion, and the NIMBY Syndrome: A Comment on Robert Nelson's "Privatizing the Neighborhood,"* 7 GEO. MASON L. REV. 881, 886–90 (1999) [hereinafter Fischel, *Risk Aversion*] (discussing the applicability of home equity insurance and housing partnerships).

<sup>118</sup> See Michael Baram, *A New Social Contract for Governing Industrial Risk in the Community*, 56 JURIMETRICS J. 223, 235 (2016) (advancing the argument for developing a mutually beneficial outcome in the presence of NIMBY opposition); Nathaniel L. Foote, *Not in My Backyard: Unconventional Gas Development and Local Land Use in Pennsylvania and Alberta, Canada*, 3 PENN ST. J. L. & INT'L AFF. 235, 238 (2015) (discussing and recommending the province of Alberta, Canada's collaborative approach to land use policy as an effective tool for avoiding NIMBY resistance to oil and gas development); Steven P. Frank, *Yes in My Backyard: Developers, Government and Communities Working Together Through Development Agreements and Community Benefit Agreements*, 42 IND. L. REV. 227, 229 (2009) (proposing the use of development agreements in combination with community benefit agreements); Ashira Pelman Ostrow, *Process Preemption In Federal Siting Regimes*, 48 HARV. J. ON LEGIS. 289, 298–99 (2011) (discussing the need to arrive at solutions to NIMBY problems by weighing the costs and benefits to various interested parties); see generally Stephanie M. Gurgol, *Won't You Be My Neighbor? Ensuring Productive Land Use Through Enforceable Community Benefits Agreements*, 46 U. TOL. L. REV. 473 (2015) (advocating the use of community benefit agreements while also examining alternative tools such as enterprise zones and tax increment financing).

<sup>119</sup> See Michael Wheeler, *Negotiating NIMBYs: Learning From The Failure Of The Massachusetts Siting Law*, 11 YALE J. ON REG. 241, 251–52 (1994); but see Patrick O'Hara, *The N.I.M.B.Y. Syndrome Meets The Preemption Doctrine: Federal Preemption of State and Local Restrictions on the Siting of Hazardous Waste Disposal Facilities*, 53 LA. L. REV. 229, 231 (1992) (noting that NIMBY

situation is different and what works for the siting of airports, waste disposal facilities, or prisons may not work for the location of oil wells.<sup>120</sup> The key point remains that if neighbors can ‘cut into a deal’ through adequate compensation that allows them to capture some of the gains of new development, there is an increased likelihood of winning them over and removing the tendency to embark or continue on a NIMBY campaign.<sup>121</sup> This point is accentuated by the fact that even in the midst of NIMBY protests, it is not uncommon to find that some members of the community are in support of the project, often because of the anticipated gains from locating the project in the area, including job opportunities and increased tax revenue.<sup>122</sup> Besides, while

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agitation may persist even in the face of higher compensation); Richman & Boerner, *supra* note 55, at 33 (referencing some scholars’ belief “that the NIMBY challenge can be overcome, and community opposition can be pacified by finding the right price to pay nearby residents” and countering that while the approach is appealing, it has not “achieved an admirable record of success”).

<sup>120</sup> See Barak D. Richman, *Mandating Negotiations to Solve the NIMBY Problem: A Creative Regulatory Response*, 20 UCLA J. ENVTL. L. & POL’Y 223, 236 (2001–02); see also Noah M. Kazis, *Public Actors, Private Law: Local Governments’ Use of Covenants to Regulate Land Use*, 124 YALE L.J. 1790, 1817 (2015) (advocating the use of land covenants by local governments as “a welcome tool for governments to fight back against NIMBY-ism”); Richman & Boerner, *supra* note 55, at 35 (observing that “NIMBY problems vary according to the facility to be sited and thus demand different regulatory solutions”); Margo Schlanger, *Stealth Advocacy Can (Sometimes) Change The World*, 113 MICH. L. REV. 897, 912 (2015) (evaluating the use of a stealth approach to prevent, curtail or manage NIMBY-like opposition to the siting of group homes, by keeping opponents in the dark about a project until it is completed or operating, thereby depriving them of opportunity to mount opposition to it).

<sup>121</sup> See Fischel, *Risk Aversion*, *supra* note 117, at 891; Tim Sime, *Our Final Burial Grounds: EPA’s CAP Program Fails to Solve the Hazardous Waste Disposal Capacity Crisis*, 4 DICK. J. ENVTL. L. & POL’Y 49, 53 (1994) (attributing lack of success in diminishing NIMBY conflicts to “the market’s failure to truly compensate members of the local community for the losses they have sustained”); Kristen Underhill, *When Extrinsic Incentives Displace Intrinsic Motivation: Designing Legal Carrots and Sticks to Confront the Challenge of Motivational Crowding-Out*, 33 YALE J. ON REG. 213, 261 (2016) (analyzing “the greater willingness of citizens to receive public goods, such as parks and bike trails, instead of cash as compensation for accepting NIMBY projects; the exchange is perceived as an opportunity to strengthen the community in exchange for a ‘civic sacrifice’”).

<sup>122</sup> See Greenberger, *supra* note 56, at 96; Ann Harrington, *Battling “NIMBY” in Reno, Nevada: A Developer Perspective*, 40 REAL EST. REV. J. 57 (2011) (discussing how a proposed senior affordable housing project overcame NIMBY objections and received local government approval because it was considered beneficial to the town’s economy and only a relatively small number of people protested formally); Hout, *supra* note 96, at 756 (“The promise of

NIMBY protestors may object to a project because of anticipated negative impact on local property values,<sup>123</sup> the project may end up enhancing property values and promoting community stability if properly designed and executed.<sup>124</sup>

It should also be noted that oil and gas companies are introducing and adopting industry best practices into fracking while stakeholders encourage further refinement of these practices.<sup>125</sup> Steps in that direction would further allay the fears or alleviate the concerns of residential owners about the consequences of oil and gas development in their area through fracking.

As has been proposed in other different contexts, what is needed is a “framework [that] encourages cooperative negotiations and discourages strategic or spiteful behavior, thus enhancing the possibility that parties will reach a cooperative agreement . . . independent of their bargaining over property rights.”<sup>126</sup> Suitable

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jobs and money are often more than a poor community can resist. By way of example, a large municipal solid waste incinerator recently sited in Robbins, Illinois, will produce revenues almost five times greater than the village’s total current municipal budget.”); Douglas Laycock & Luke W. Goodrich, *RLUIPA: Necessary, Modest, and Under-Enforced*, 39 *FORDHAM URB. L.J.* 1021, 1032 (2012) (articulating the point that many residents who expect to benefit through jobs, shopping and increased tax revenue from some projects, such as movie theaters, grocery stores and Walmart stores would support the projects, even in the face of NIMBY opposition, while for some other projects such as churches, many residents would not be as welcoming because they see little benefit from a new church coming into their neighborhood as they would be less likely to attend the church due the fact that they already have a church they attend or are not interested in attending any church); Lewyn, *Zoning*, *supra* note 65, at 261 (explaining that NIMBY proponents are able to stop development of housing even in pro-development communities by utilizing available administrative processes at various levels of government).

<sup>123</sup> See Dickerson, *supra* note 66, at 985 n.43 (“Homeowners in upper-income neighborhoods also fight attempts to place socially useful but undesirable properties like half-way housing, homeless shelters, and group homes in their neighborhoods because of concerns that those properties may depress the values of their homes.”). McGowan, *supra* note 68, at 330 (describing the NIMBY concept as “the ever-present influence of nearby landowners opposing any institution or facility that might depress property values”).

<sup>124</sup> See Mark Wilson, *Organizational Sustainability: A Self-Help Housing Corporation’s Recipe for Success*, 40 *REAL EST. REV. J.* 37 (2011) (“In truth, properly maintained affordable housing developments designed and built with sensitivity to the architectural and aesthetic standards desired by the community, may even increase property values and enhance community stability.”).

<sup>125</sup> See Dennis C. Stickley, *Expanding Best Practice: The Conundrum of Hydraulic Fracturing*, 12 *WYO. L. REV.* 321, 333 (2012).

<sup>126</sup> Elizabeth S. Scott, *Pluralism, Parental Preference, and Child Custody*, 80

options may be explored to assuage NIMBY agitation, break holdouts, resume negotiations, and bring transactions to more acceptable and amicable conclusions.<sup>127</sup>

#### IV. NEW POLICY DIRECTIONS

There are a number of legislative and non-legislative approaches and tools that may be considered by various states to improve the current legal and economic environment for developing oil and gas resources in residential areas. The objective is to arrive at endpoints that yield benefits to the mineral owners, oil and gas operators, and society as a whole.<sup>128</sup> This part identifies two such options, namely disruption payments and limited purpose agreements for consideration by policy makers and the various stakeholders in the oil and gas industry.

##### A. *Disruption Payments*

There are two major types of disruption payments. One type requires payment by the company involved to persons affected by its disruptive activity. This approach is applicable in North Dakota, Montana, and Wyoming. Another type of disruption payment requires payment by the government, out of tax funds, for

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CAL. L. REV. 615, 652 (1992) (discussing parental rights and child custody).

<sup>127</sup> See Brandon Gerstle, *Giving Landowners the Power: A Democratic Approach for Assembling Transmission Corridors*, 29 J. ENVTL. L. & LITIG. 535, 558 n.141 (2014) (discussing reduction of landowner holdout through public participation and lessening of conflicts through negotiations); Damon Y. Smith, *Participatory Planning and Procedural Protections: The Case for Deeper Public Participation in Urban Redevelopment*, 29 ST. LOUIS U. PUB. L. REV. 243, 246 (2009) (proposing “a participatory planning process that strikes a balance between those who argue for elimination of eminent domain, for economic development purposes, and the overuse and abuse of eminent domain powers that have plagued urban communities for decades”).

<sup>128</sup> Patricia Nelson Limerick outlines some steps that can be taken to ensure this outcome:

Four principal activities hold the greatest promise for providing a resolution to many current conflicts over subsurface mineral development: 1) fair and open negotiation between surface owners and mineral developers; 2) the adoption of technology that is minimally disruptive of the surface and of water resources, even if that technology might entail greater initial expense; 3) the most careful consideration of remediation and restoration, and the costs and commitments required to do this right; and 4) experimentation with a new, more engaging, and congenial form of public communication on energy issues . . . .

Patricia Nelson Limerick, *Changing Winds*, in 2008 ROCKY MTN. MIN. L. FOUND. 1, 1 (2008).

disruption caused by the industry. Corporate and political leaders have proposed these two approaches in the United Kingdom in anticipation of shale gas development.<sup>129</sup> A third type of disruption payment could include the formation of a hybrid arrangement that consists of a combination of company and government contributions to a fund dedicated to making payments to those whose lives have been disrupted by a particular development, such as fracking.

In 1980, North Dakota passed the state's Oil and Gas Production Damage Compensation Act,<sup>130</sup> leading a commentator to observe that the state was "emerging as a trend-setter in the area of surface owner protection."<sup>131</sup> Under the statute, a surface owner is entitled to damage and disruption payments for lost land value, lost use of and access to surface owner's land or lost value of improvements caused by drilling operations.<sup>132</sup> The statute provided that "[t]he amount of damages may be determined by any formula mutually agreeable between the surface owner and the mineral developer."<sup>133</sup> The purpose of the payments is "to

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<sup>129</sup> See Emily Gosden, *Fracking: Communities May Miss Out on Cash Payments*, THE TELEGRAPH ONLINE, (Mar. 10, 2015, 8:00 PM), <http://www.telegraph.co.uk/news/earth/energy/fracking/11462840/Fracking-communities-may-miss-out-on-cash-payments.html>; John Kemp, *Britain's Fracking Communities Eye US-Style Payouts*, REUTERS (Aug. 15, 2013), <https://uk.reuters.com/article/column-britain-fracking/column-britains-fracking-communities-eye-us-style-payouts-kemp-idUKL6N0GG1TF20130815>; REMSOL LTD., *A BLUEPRINT FOR SHALE GAS COMMUNITY BENEFITS* (2016); Alan Tovey, *Ineos Offers £2.5bn to Communities Disrupted by Shale Gas*, THE TELEGRAPH ONLINE (Sept. 28, 2014), <http://www.telegraph.co.uk/finance/newsbysector/energy/oilandgas/11126668/Ineos-offers-2.5bn-to-communities-disrupted-by-shale-gas.html> (discussing proposals by energy companies to make payments to homeowners and landowners affected by anticipated shale gas development); Adam Vaughan, *Community Benefits No 'Game-Changer' for Fracking, Says IGas Boss*, THE GUARDIAN (Dec. 19, 2013), <https://www.theguardian.com/environment/2013/dec/19/fracking-shale-gas-benefits>; Tim Worstall, *Theresa May Solves the UK Fracking Problem with Royalty Share to Households*, FORBES (Aug. 7, 2016), <https://www.forbes.com/sites/tim-worstall/2016/08/07/theresa-may-solves-the-uk-fracking-problem-with-royalty-share-to-households/#4869204a48c5>.

<sup>130</sup> See N.D. CENT. CODE §§ 38-11.1-01 to 38-11.1-10 (1980).

<sup>131</sup> Paul F. Hultin, *Recent Developments in Statutory and Judicial Accommodation Between Surface and Mineral Owners*, 28 MIN. L. INST. 18 (1982). For an excellent discussion of surface damage statutes passed in other states prior to and subsequent to the North Dakota statute, see Ronald W. Polston, *Surface Rights of Mineral Owners: What Happens When Judges Make Laws and Nobody Listens?*, 63 N.D. L. REV. 41 (1987).

<sup>132</sup> See N.D. CENT. CODE § 38-11.1-04.

<sup>133</sup> *Id.*

compensate the surface owner for damage and disruption,” and flowing from that, the provision prohibits the surface owner from reserving or assigning such compensation apart from the surface estate except to a tenant of the surface estate.<sup>134</sup> Movement in this direction continued with the passage of a similar law in Montana—the Montana Surface Owner Damage and Disruption Compensation Statute in 1981.<sup>135</sup> In *Murphy v. Amoco Production Co.*,<sup>136</sup> the Court of Appeals for the Eighth Circuit upheld the constitutionality of North Dakota “Oil and Gas Production Damage Compensation” law as, *inter alia*, a valid exercise of the police power of the state.<sup>137</sup>

It appears that these statutes provide protection and relief for surface owners in whose estate the disruption occurred, but not owners of neighboring surface estates.<sup>138</sup> The system of disruption payments advocated by this Article would be structured to protect everybody in the neighborhood whose use of property is disrupted because of oil and gas operations, regardless of whether drilling operations caused damage on their land. In 2016, the British Prime Minister, Theresa May, proposed such a system of disruption payments in which people living in neighborhoods where fracking is approved would see a percentage of profits from fracking, potentially up to £10,000, paid directly to them.<sup>139</sup> The government would pay the money by devoting ten percent of tax revenues from fracking into the scheme.<sup>140</sup> This approach of direct payments to individuals and local communities departs from initial

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<sup>134</sup> *See id.*

<sup>135</sup> *See* MONT. CODE ANN. §§ 82-10-501 to 82-10-511. (1981); WYO. STAT. ANN. § 30-5-405 (2005).

<sup>136</sup> *See* *Murphy v. Amoco Prod. Co.*, 729 F.2d 552 (8th Cir. 1984).

<sup>137</sup> *Id.* at 554–60; *see also* *Kartch v. EOG Resources, Inc.*, 2010 WL 4260103, \*2–3 (D.N.D. 2010).

<sup>138</sup> *See* Memorandum in Support re Motion for Summary Judgment for the Defendant, *Monson v. Zenergy, Inc.*, 2010 WL 5623337 (D.N.D.) (“First, Plaintiffs contend they are entitled to damage and disruption payments under N.D.C.C. § 38-11.1-04. However, the plain language and legislative history of that Section confirms that it provides a remedy only for the owner of the surface estate where the drilling operations that caused damage or disruption occurred, not neighboring surface owners or tenants.”).

<sup>139</sup> *See* Caroline Wheeler, *Are You in Line for £10,000 Government Payout for Fracking Disruption?*, SUNDAY EXPRESS ONLINE (Aug. 8, 2016) [hereinafter Wheeler, *Fracking Disruption*], <http://www.express.co.uk/news/uk/697345/House-holds-communities-fracking-shale-gas-payout-profit-share-Theresa-May>.

<sup>140</sup> *See id.*

plans to make the payments to local authorities for use in development spending projects in line with local priorities, including local infrastructure and skills training.<sup>141</sup> Because the payments would be based on tax revenues from fracking, which in turn depends on government approval, commencement of production and profitability of the operation, it would take years before the money starts getting to the beneficiaries.<sup>142</sup>

A recent example from Boulder, Colorado is instructive. In March 2017, Boulder County adopted new oil and gas regulations, which revised regulations adopted in 2012.<sup>143</sup> One of the high points of the new regulations is a provision on disruption payments, which would be made “to surrounding occupants of residential structures who are affected by drilling activities.”<sup>144</sup> Where applicable, an oil and gas company could be required to pay residents living within a mile radius from a drill site a sufficient amount of money to relocate temporarily and pay rent during the months when oil and gas drilling and completion activities take place.<sup>145</sup> The amount to be paid will vary, based on proximity, with those residing closer to the drill site getting more money than those living farther from it.<sup>146</sup> The payments will be made on a monthly basis and the recipients are free to stay in their houses and keep the money or move temporarily.<sup>147</sup> The provision underscores the importance of timely receipt of the funds by stating that “[a]ny required disruption payments must be made at least sixty (60) days before commencement of well construction.”<sup>148</sup>

Disruption payments serve a number of useful purposes. They can play the role of convenience agent that helps absorb the

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<sup>141</sup> See *id.*

<sup>142</sup> See Mance & Clark, *supra* note 142.

<sup>143</sup> See *Boulder County Adopts the Strongest Set of Regulations on Oil and Gas Development in the State of Colorado*, BOULDER COUNTY (Mar. 23, 2017), <https://www.bouldercounty.org/news/boulder-county-adopts-strongest-set-of-regulations-on-oil-and-gas-development-in-the-state-of-colorado/>.

<sup>144</sup> *Id.*

<sup>145</sup> See Jackie Fortier, *Boulder County Adopts New Oil and Gas Regulations*, COYOTE GULCH BLOG (Mar. 27, 2017), <https://coyotegulch.blog/2017/03/27/boulder-county-adopts-new-oil-and-gas-regulations/>.

<sup>146</sup> See *id.*

<sup>147</sup> See *id.*

<sup>148</sup> Boulder, Colorado, Boulder County Land Use Code art. XII § 701(D)(3) (2017).

inconvenience of oil and gas production.<sup>149</sup> They also help ensure that energy companies internalize some of the consequences of their economic activity, instead of externalizing it to others.<sup>150</sup> In addition, the payments can become a tool for economic regeneration or growth in the oil producing areas. For individual recipients, it becomes a source of capital and the money received can be deployed to other productive uses.<sup>151</sup> Prime Minister May articulates the point this way: “It’s about making sure people personally benefit from economic decisions, not just councils, and putting people back in control of their lives.”<sup>152</sup> The multiplicity of economic activities from the injection of fresh capital and budding of entrepreneurial activities can transform local economies. It has been observed that in the UK, where households in some parts of the country could receive up to £10,000, that these payments could turn “northern towns such as Blackpool into the UK equivalents of oil-rich communities in the Middle East.”<sup>153</sup> Disruption payments may also be structured to compensate for the reduction in property values and the inability to sell homes that residents may experience as a result of fracking in the neighborhood. These benefits, singly or collectively, would also galvanize acceptance of oil and gas production and thus serve as an effective negotiation tool, constraining holdout behavior and curtailing NIMBY-ism.<sup>154</sup>

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<sup>149</sup> See John Fryar, *New Boulder County Oil and Gas Rules Subject Drillers to “Disruption Payments” to Disturbed Neighbors*, DENVER POST (Mar. 24, 2017), <http://www.denverpost.com/2017/03/24/new-boulder-county-oil-and-gas-rules/> (“The [Boulder County] regulations include a required system of “disruption payments” to surrounding residents to cover the costs if they have to temporarily move to a rental property elsewhere while fracking or drilling is underway near their homes.”).

<sup>150</sup> See Kate Phillips, *What is the True Cost of Hydraulic Fracturing? Incorporating Negative Externalities into the Cost of America’s Latest Energy Alternative*, 2 J. STUDENT RES. ENVTL. SCI. APPALACHIAN 40, 41 (2012) (discussing the negative externalities of shale gas production through hydraulic fracturing and arguing that the costs of this production method that are borne by tax payers should be factored in when calculating the true cost of electricity generated by using gas produced from unconventional fields).

<sup>151</sup> See Wheeler, *Fracking Disruption*, *supra* note 139 (stating that the UK Prime Minister “insists the new scheme is about rebalancing the economy in favour of ordinary people.”).

<sup>152</sup> *Id.* (quoting UK Prime Minister, Mrs. Theresa May).

<sup>153</sup> *Id.*

<sup>154</sup> See Mance & Clark, *supra* note 142 (“Cash payments are seen as a simple way of winning support for fracking and new housing, both of which are opposed in parts of the UK.”).

Proposed and existing disruption payment systems have been assailed on a number of grounds. They are viewed as an inadequate safeguard against the dangers of oil and gas development, particularly through fracking. Commenting on the Boulder regulations, one observer stated: “Families will be able to take their children and pets and leave their family home to go somewhere safe, and when it’s all over return to their poisoned and disrupted home to resume life for free, or partly free.”<sup>155</sup> This criticism ignores the fact that the payments do not pretend to be an alternative to adequate health, safety, and environmental standards that should be in place to protect the people from fracking operations. They are not a replacement tool, but an aid to ease the burden on the people affected by fracking.

Another criticism considers these payments as a bribe to secure the consent and cooperation of surface owners or other stakeholders who would ordinarily be opposed to fracking.<sup>156</sup> One reporter offers an apt response: “One person’s bribe is another’s compensation.”<sup>157</sup> Perhaps campaigners will eventually succeed in banning fracking everywhere in the world. Until that dream becomes a reality, those affected cannot afford to let idealism rule while their immediate problems from fracking are compounded. Instead of facing the disruption silently or being trapped in it, affected persons will be afforded an opportunity to move to a more hospitable place during the disruptive period, or otherwise use the money to compensate for their loss of utility from the disruption.

A related point of criticism is that the disruption payments may be insufficient to compensate for the magnitude of loss that may be experienced by property owners in neighborhoods where drilling takes place. For instance, the UK proposal includes the creation of a shale wealth fund into which ten percent of tax receipts from fracking would be paid. The government would then distribute a maximum of £10 million to residents in each oil producing community. For a community of one thousand residents,

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<sup>155</sup> Stuart Paul, *Wake Up, Boulder County, To Effects of Fracking*, BOULDER DAILY CAMERA, (Mar. 22, 2017, 7:20 PM), [http://www.dailycamera.com/letters/ci\\_30872832/stuart-paul-wake-up-boulder-county-effects-fracking](http://www.dailycamera.com/letters/ci_30872832/stuart-paul-wake-up-boulder-county-effects-fracking).

<sup>156</sup> See Wheeler, *Fracking Disruption*, *supra* note 139 (“Critics will say the proposal is an attempt to buy off opposition in communities affected by fracking.”).

<sup>157</sup> *Households Could Get Fracking Payments Under Government Plans*, BBC (Aug. 7, 2016), <http://www.bbc.com/news/uk-37000975> (last visited April 9, 2017).

that means each person can receive up to £10,000.<sup>158</sup> However, this payment is for the lifetime of the resource, which could be up to twenty-five years, translating into a payment of about £400 per household per year.<sup>159</sup> An acceptable payout deal is one in which residents receive an amount that is equal to the value of their home, plus any difference between the old and new homes of similar specifications and an additional amount as moving expenses. Thus, the compensation should go beyond the hassle of temporary relocation to the burden of permanent relocation.

While a deal of this nature may still be rejected by those who are attached to a particular neighborhood for emotional and other reasons and would not want to move, it is possible that the deal would be acceptable to many people who reside in areas where the fracking technique would be deployed. The bigger question becomes whether gas companies would be willing or able to make such payments, or if society would be prepared to pay higher energy prices if the companies choose to make the payments and shift the costs to consumers. Besides, a counter-argument may be presented that the negative impact of fracking on residential home values may be exaggerated because fracking is not the dangerous bogeyman it has been made out to be by environmental and political activists,<sup>160</sup> and so disruption payments tied to this exaggerated impact would be too high. While there is some merit in the counter-argument, the reality is that housing values are driven, in part, by perceptions.<sup>161</sup> So long as future home owners buy into the perception that fracking is dangerous, it will affect their decision on whether to move into a neighborhood in which fracking is taking place and the amount they would offer to purchase a home in that neighborhood.

The structure of disruption payments may also provide a ground for attack. The proposal in the UK would make payments from oil and gas revenues. The result is that those affected by the disruption do not receive any payments for years after the signing of the leases and commencement of drilling operations. Worse

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<sup>158</sup> See Wheeler, *Fracking Disruption*, *supra* note 139.

<sup>159</sup> See Mance & Clark, *supra* note 142.

<sup>160</sup> See Kevin Begos, *Experts: Some Fracking Critics Use Bad Science*, ASSOCIATED PRESS (Jul. 23, 2012), <http://bigstory.ap.org/article/experts-some-fracking-critics-use-bad-science>.

<sup>161</sup> See Nadav Shoked, *The Community Aspect of Private Ownership*, 38 FLA. ST. U. L. REV. 759, 799 (2011).

still, if the well is not productive, no payments will be made, as no revenues will be received. This arrangement effectively and involuntarily converts affected residents into risk-bearers who share the risk of oil and gas production with energy companies. Some people will consider this outcome as neither palatable nor acceptable. Boulder County's approach of payment prior to commencement of well construction strikes the right note.<sup>162</sup>

Another criticism of disruption payments for fracking operations is that it singles out one industry for punishment. According to this criticism, many other commercial, industrial, and public works activities can also be disruptive, yet the actors are not required to make any payments to those affected. To the proponents of this view, there is hardly any justification for exempting road construction companies from a requirement to make disruptive payments while such a duty is imposed on fracking firms. This is a formidable point. A direct response would be that it is a good argument for inclusion of other entities, not an exclusion of oil and gas companies. For instance, payments are made to train operators in the United Kingdom for disruption to the rail network that is out of their control, resulting in train delays and cancellations.<sup>163</sup> Train passengers in turn receive compensation if the rail company delays or cancels their trip.<sup>164</sup> Also, some airline passengers in the European Union are entitled to disruption payments if their flights are delayed for three hours or more in getting to their final destination.<sup>165</sup> The airlines would escape responsibility if the delays were due to extraordinary circumstances.<sup>166</sup>

A close examination of the merits of disruption payments and the objections to them leaves one with the conclusion that there is

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<sup>162</sup> See Boulder, Colorado, Boulder County Land Use Code art. XII § 701(D)(3) (2017).

<sup>163</sup> See Ashley Kirk & Tom Ough, *640 Train Journeys Cancelled Daily in Britain*, THE TELEGRAPH (Nov. 17, 2016), <http://www.telegraph.co.uk/news/2016/11/17/is-yours-the-rail-network-which-has-cancelled-the-most-trains-in/> (showing that rail companies paid out £45 million in compensation to delayed passengers in England and Wales during the past year while receiving £105 million from Network Rail for unplanned disruption).

<sup>164</sup> See *id.*; see also *Passenger Rights to Refunds & Compensation*, NATIONAL RAIL, [http://www.nationalrail.co.uk/times\\_fares/ticket\\_types/72098.aspx](http://www.nationalrail.co.uk/times_fares/ticket_types/72098.aspx) (last visited Feb. 4, 2018).

<sup>165</sup> See Barry O'Halloran, *Airline Ruling Clears Way for Payout*, IRISH TIMES (Sept. 18, 2015), <https://www.highbeam.com/doc/1P2-38748441.html>.

<sup>166</sup> See *id.*

a sound basis for using them. Energy companies may propose them as they try to win the hearts and minds of prospective lessees. The Railroad Commission of Texas and conservation agencies in other states could recommend the practice to energy companies or draw attention to these payments to residential areas on the verge of deciding on gas development in their neighborhood. Most importantly, Texas and other states that have sizable shale gas deposits and want to allow or continue fracking in residential areas should pass legislation creating a system of disruption payments.

While additional details can be worked out, at a minimum, an ideal system will consist of the following components:

1. Payment to all residential households in a neighborhood where fracking is slated to take place to cover the cost of temporary relocation while drilling and well completion activities are taking place. The residents will have a choice of keeping the money or using it to rent temporary accommodations. The payments will be made to surface owners or owners of both surface and mineral interests. As an incentive for dealing with holdouts, it may also be extended to owners of mineral interests, who do not own surface interests.
2. The temporary relocation payment will be made prior to the commencement of construction and drilling.
3. Where financial resources permit, an expanded version of disruption payments may be approved to pay for people to move out of the neighborhood permanently. Those who choose to move will receive the value of their home plus the differential cost of acquiring a similar property in a similar neighborhood within the state. Home owners will be required to list the property for sale for a certain period, and if the property does not sell within the stipulated period, the home owner will receive a payment for the value of the house plus the difference. If the property sells, the home owner will receive an additional check for the difference, including expenses incurred in selling the house.
4. The permanent relocation payment will be paid within one year of commencement of production from any property in the area. That way, it is established that fracking will be a feature of the neighborhood for some time, with possible consequences for home values. It also allows for an opportunity for the energy company

and the state to earn or receive some revenue from the project before embarking on a large financial undertaking.

5. The permanent relocation cost will be borne by the energy company. However, the state should consider involving the rest of the citizens either through contribution of state funds to subsidize these payments, provision of tax credits to energy companies, or by sensitizing citizens to the fact that they would be contributing indirectly through increased energy costs. Oil and gas are global commodities.<sup>167</sup> So, energy costs may rise if an oil and gas company can simply no longer drill and produce oil and gas profitably. However, the country will simply import oil and gas from overseas unless the price of oil and gas gets so high that domestic producers can profitably produce oil and gas even with the burden of disruption payments.<sup>168</sup>
6. The energy company will negotiate with the citizens on the amount to be paid for the relocation payments. To cut down on transaction costs, the company may negotiate with the leaders of homeowners associations or some appointed representative of the whole neighborhood.
7. Where the parties do not agree on the value to be attached to the temporary or permanent disruption, a court may set the value. This method would be similar to the approach adopted in corporate law for mergers, acquisitions, and sale of assets in which dissenting shareholders are provided an appraisal remedy.<sup>169</sup>

Another tool that can improve the negotiation landscape and cater to the interests of prospective lessors and lessees is a limited purpose agreement, which can be adapted from other areas in which it has been used and applied to this context to promote mutually beneficial shale gas production. This tool is discussed

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<sup>167</sup> See generally John L. Keffer, *Gas-To-Energy: Structuring Downstream Projects*, ROCKY MTN. MIN. L. FOUND. (2001) (“Natural gas is challenging oil, both as a global commodity and as the primary business of major energy companies.”).

<sup>168</sup> The early history of the U.S. oil and gas industry provides valuable lessons in this regard.

<sup>169</sup> See STEPHEN M. BAINBRIDGE ET AL., *BUSINESS ASSOCIATIONS: CASES AND MATERIALS ON AGENCY, PARTNERSHIPS, LLCs, AND CORPORATIONS* 729–30 (10th ed. 2018).

below.

### B. *Limited Purpose Agreements*

In view of the NIMBY-based opposition to fracking, it is expected that parties to proposed fracking projects will engage in some level of negotiation. To ensure that the negotiation proceeds smoothly, some steps and tools may need to be in place. A potentially useful tool in that regard is a limited purpose agreement. This agreement may be signed between the oil and gas company and all potential lessors or home owners that may be affected by the development project. These parties should utilize limited purpose agreements to arrive at a quick, acceptable conclusion to their negotiations. Oil and gas companies may also be more proactive and include the essence of the limited purpose agreement as a clause in the oil and gas lease that they present to potential lessors.

Without doubt, a limited purpose agreement is a worthy option for consideration in seeking to achieve fruitful negotiations.<sup>170</sup> As its name suggests, a limited purpose agreement is an agreement designed with a narrowly tailored objective in view. Limited purpose arrangements exist in various forms and settings. For instance, a joint venture is often defined as a limited purpose arrangement utilized to accomplish some defined goals of the co-adventurers.<sup>171</sup> A limited purpose agreement can address NIMBY objections in a way that does not create immediate obligations. The agreement could “contain contingent liability provisions—including perhaps insurance contracts or escrowed funds—adequate to cover specified categories of” concerns and demands.<sup>172</sup>

An agreement of this nature was used by Bloomingdales’ parent company as it faced NIMBY protests when it wanted to

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<sup>170</sup> See Frederick R. Anderson, *Negotiation and Informal Agency Action: The Case of Superfund*, 1985 DUKE L.J. 261, 358 (1985).

<sup>171</sup> See ROBERT W. HAMILTON ET AL., *THE LAW OF BUSINESS ORGANIZATIONS: CASES, MATERIALS, AND PROBLEMS* 75 (12th ed. 2014) (“The modern view . . . treats a joint venture simply as a general partnership that has a limited purpose.”); ROBERT A. RAGAZZO & FRANCES S. FENDLER, *CLOSELY HELD BUSINESS ORGANIZATIONS: CASES, MATERIALS, AND PROBLEMS* 181 (2d ed. 2012); Emeka Duruigbo, *Community Equity Participation in African Petroleum Ventures: Path to Economic Growth?*, 35 N.C. CENT. L. REV. 111, 114 (2013).

<sup>172</sup> Anderson, *supra* note 170, at 358.

construct the White Flint Mall, in suburban Montgomery County, Maryland.<sup>173</sup> The company agreed to erect a berm to protect the surrounding residential neighborhood and to indemnify some of the local homeowners should there be a drop in property values.<sup>174</sup> These agreements allowed negotiations with local residents to continue over the design of the mall, and the proposal eventually went unopposed by local citizens.<sup>175</sup>

A major challenge with this proposal is that energy companies may be reluctant to initiate negotiations for such agreements, due to expected high transaction costs of assembling hundreds of small mineral owners for concrete discussions and effective negotiations.<sup>176</sup> On the other hand, collective action problems may militate against small mineral owners organizing themselves into a negotiating bloc to achieve the most beneficial outcome.<sup>177</sup> In view of these constraints, it may be worthwhile for state regulators or conservation agencies to require the adoption of this technique by potential lessees and lessors. A template may be developed with the collaboration of government agencies, non-governmental organizations and industry groups that may be adapted for, or tailored to, particular needs.<sup>178</sup> This approach would accomplish the intended result of profitable oil and gas development without generating unnecessary bad blood between parties that may be locked into what could turn out to be a long-term commercial relationship. Accordingly, notwithstanding the financial costs, energy companies should be proactive and consider adopting the

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<sup>173</sup> See *id.* at 358 n.365.

<sup>174</sup> See *id.*

<sup>175</sup> See *id.*; see also MALCOLM D. RIVKIN, *NEGOTIATED DEVELOPMENT: A BREAKTHROUGH IN ENVIRONMENTAL CONTROVERSIES* 7–14 (1977).

<sup>176</sup> See Abraham Bell, *Private Takings*, 76 U. CHI. L. REV. 517, 552 (2009) (discussing one solution the law has devised to overcome the impediment posed by high transaction costs to resource development); Paula C. Murray & Frank B. Cross, *The Case for a Texas Compulsory Unitization Statute*, 23 ST. MARY'S L.J. 1099, 1113 (1992) (stating that transaction costs are increased when a negotiation involves numerous rights owners).

<sup>177</sup> See David B. Spence, *Corporate Social Responsibility in the Shale Patch?*, 21 LEWIS & CLARK L. REV. 387, 415–16 n.165 (2017) [hereinafter Spence, *Shale Patch*].

<sup>178</sup> Such collaborative approach in developing a template or handbook was employed recently by the U.S. Department of Commerce and the African Legal Support Facility in relation to international power purchase agreements. See generally U.S. DEPT. OF COMMERCE, *UNDERSTANDING POWER PURCHASE AGREEMENTS* (2014).

limited purpose agreement, even in the absence of legislation. Such a stance will likely yield large payoffs through improved relations and a legitimate social license to operate.<sup>179</sup>

#### CONCLUSION

The sustained success of shale gas operations in the United States requires the cooperation of mineral owners, home owners, host communities, energy companies, and policy makers. Affected persons are likely to withhold cooperation if they believe that energy production in their neighborhood would leave their interests shortchanged and their lives or livelihoods imperiled in the process of developing these natural resources. Existing laws favor mineral development in a way that many people in residential areas find discomfiting. The apprehension of home owners and residents sometimes is misplaced and their concerns are exaggerated, but a balanced approach that recognizes legitimate fears and seeks to address them for mutually beneficial outcomes is essential. This Article has set out to accomplish the goal of elucidating the key issues regarding the impact of fracking on people in residential areas, including owners and occupants of homes in those places, and proposing some solutions to mitigate the impact.

In particular, this Article recommends the use of limited purpose agreements to promote mutually beneficial negotiation outcomes, and makes a special case for disruption payments which can be used to compensate residents and assuage fears or feelings of ill-will while preventing NIMBY-based objections. The expectation is that we can have responsible shale gas production that maximizes the interests of all sides, minimizes conflicts, and galvanizes economic development that in turn translates to social progress.

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<sup>179</sup> For the benefits or importance of a social license to operate, see Duruigbo, *supra* note 171, at 146; *see also* Spence, *Shale Patch*, *supra* note 177, at 409 (stating that some corporate social responsibility spending embarked upon by some energy companies “can be explained as attempts to address some of the specific effects of the shale boom, or as long term investments aiming to improve the business environment for producers in the shale regions”).

# CLE READING MATERIALS

## Federal Lands and Fossil Fuels: Maximizing Social Welfare in Federal Energy Leasing

FOR

2:40 p.m. – 4:00 p.m.

**EMERGING ISSUES IN NATURAL RESOURCES POLICY**

- **Nada Culver**, Senior Counsel and Director, The Wilderness Society's BLM Action Center
- **David J. Hayes**, Executive Director, State Energy and Environmental Impact Center at NYU Law; former Deputy Secretary of the Interior
- **Brenda Mallory**, Executive Director and Senior Counsel, Conservation Litigation Project; former General Counsel for the White House Council on Environmental Quality
- Moderator: **Jayni Hein**, Policy Director, Institute for Policy Integrity

**PLEASE RETURN TO REGISTRATION TABLE**

# FEDERAL LANDS AND FOSSIL FUELS: MAXIMIZING SOCIAL WELFARE IN FEDERAL ENERGY LEASING

Jayni Foley Hein\*

*Pursuant to several statutes, the Department of the Interior is tasked with managing the nation's mineral resources under the principles of "multiple use" and "sustained yield" and must earn "fair market value" for the use of federal lands and their resources. In recent years, Interior's coal, oil, and natural gas leasing programs have been criticized for failing to keep pace with developments in modern technology, shortchanging taxpayers, and failing to adequately account for climate change and other environmental effects. This Article suggests a rational path forward for federal fossil fuel leasing. Just as a private company would seek to maximize net revenue in its operations, Interior should seek to manage its program to provide maximum net benefits to the public. Yet distinct from a private actor, Interior is the steward of federal lands for current and future generations and must balance production with environmental preservation. This Article argues that Interior should account for all of the costs and benefits of leasing—including environmental and social costs—and adjust the fiscal terms of its fossil fuel leases to recoup unmitigated externality costs. In doing so, Interior can arrive at a social welfare-maximizing leasing program. The Article describes how a social welfare-maximizing framework is consistent with the best interpretation of Interior's statutory mandates as confirmed by legislative history, judicial precedent, and principles of executive-level review in place since the Reagan Administration that instruct agencies to maximize the net benefits of their policy choices. The reforms suggested here can significantly increase revenue for states and the federal government while reducing greenhouse gas emissions, illustrating the utility of using fiscal reform as a policy lever in the absence of comprehensive climate change legislation.*

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\* Policy Director, Institute for Policy Integrity, New York University School of Law, and Adjunct Professor of Law, New York University School of Law. I am grateful to Caroline Cecot, Peter Howard, Michael Livermore, and Richard Revesz for providing thoughtful comments on this Article, and to Ben Scrimshaw for excellent research assistance. Thanks to the editors of the *Harvard Environmental Law Review* for their careful edits.

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## INTRODUCTION

In his 2016 State of the Union address, former President Barack Obama signaled a critical policy shift in federal fossil fuel leasing, stating: "I'm going to push to change the way we manage our oil and coal resources, so that they better reflect the costs they impose on taxpayers and our planet."<sup>1</sup> Shortly after the President's remarks, the U.S. Department of the Interior ("Interior") announced that it would pause all new coal leasing and launch a comprehensive review of the federal coal program to identify reforms that would better account for the environmental costs of coal production and assess whether the public is receiving a fair return.<sup>2</sup> This was the first time in thirty years that Interior is-

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1. Press Release, White House, Remarks of President Barack Obama—State of the Union Address as Delivered (Jan. 13, 2016), <https://perma.cc/7TGJ-SEJ7>.

2. DEP'T OF THE INTERIOR, SECRETARIAL ORDER NO. 3338 7-8 (2016).

sued a moratorium on coal leasing; it signaled the possibility of a new era in federal natural resources management more attuned to the climate impacts and other social costs of fossil fuel production.

However, such executive branch actions are susceptible to amendment or revocation in new presidential administrations. In the first six months of the Trump Administration, Interior issued a Secretarial Order ending the coal leasing moratorium and programmatic environmental review,<sup>3</sup> and stayed or repealed multiple regulations designed to increase fiscal transparency and reduce oil and natural gas pollution on federal lands.<sup>4</sup> As a Presidential candidate, Donald Trump made his views on federal energy production known, stating that: “America is sitting on a treasure trove of untapped energy—some \$50 trillion dollars in shale energy, oil reserves and natural gas on federal lands, in addition to hundreds of years of coal energy reserves. It’s all upside: more jobs, more revenues, more wealth, higher wages, and lower energy prices.”<sup>5</sup> Thus, just as the “keep it in the ground” movement was gaining traction—with its proponents touting the need to curb fossil fuel leasing in order to reduce greenhouse gas emissions—the United States now finds itself on the precipice of a “drill, baby, drill”<sup>6</sup> era.

Contrary to President Trump’s remarks, fossil fuel leasing is not “all upside.” There are real costs—including pollution costs—that should be taken into consideration in managing these programs in order to provide maximum net benefits to the public. Central to this Article, the externalities<sup>7</sup> of fossil fuel

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3. DEP’T OF THE INTERIOR, SECRETARIAL ORDER 3348 (2017), <https://perma.cc/L2SF-RCXJ>.
  4. *See, e.g.*, Waste Prevention, Production Subject to Royalties, and Resource Conservation; Postponement of Certain Compliance Dates, 82 Fed. Reg. 27,430 (June 15, 2017) (postponing certain compliance dates under the Waste Prevention, Production Subject to Royalties, and Resource Conservation Rule, 81 Fed. Reg. 83,008 (Nov. 18, 2016)); Postponement of Effectiveness of the Consolidated Federal Oil & Gas and Federal & Indian Coal Valuation Reform 2017 Valuation Rule, 82 Fed. Reg. 11,823 (Feb. 27, 2017) (postponing the effectiveness of the Consolidated Federal Oil & Gas and Federal & Indian Coal Valuation Reform Rule, 81 Fed. Reg. 43,338, (July 1, 2016)); Repeal of Consolidated Federal Oil & Gas and Federal & Indian Coal Valuation Reform, 82 Fed. Reg. 36,934 (Aug. 7, 2017) (repealing the Consolidated Federal Oil & Gas and Federal & Indian Coal Valuation Reform Rule, 81 Fed. Reg. 43,338 (July 1, 2016)). Each of these actions has been challenged in federal court.
  5. *Full Speech: Trump Addresses Charlottesville Violence in Energy Speech*, THE HILL (Sept. 22, 2016), <https://perma.cc/22HJ-ZAVT>.
  6. Sarah Palin, Governor of Alaska, Biden-Palin Vice Presidential Debate (Oct. 2, 2008), <https://perma.cc/2P2T-LDG9> (“The chant is ‘drill, baby, drill.’ And that’s what we hear all across this country in our rallies because people are so hungry for those domestic sources of energy to be tapped into.”).
  7. Externalities are positive or negative spillover effects that affect the welfare of others. Pollution is a traditional example of a negative externality. *See, e.g.*, Thomas Helbling, *Externalities: Prices Do Not Capture All Costs*, INT’L MONETARY FUND: FIN. & DEV., <https://perma.cc/8W4U-XF7J>.

production—including air pollution—are not accounted for when leasing. This results in fossil fuel production on public lands imposing significant social costs. In addition, several government studies have shown that federal fossil fuel leasing programs are riddled with loopholes and stagnant fiscal terms that short-change federal taxpayers, to whom the nation's mineral resources belong.<sup>8</sup> President Trump has indicated his intention to run the United States more like a business,<sup>9</sup> but a well-run business would not give away its assets for a fraction of their true value, nor allow outside actors to impose uncompensated costs on its bottom line. Moreover, Interior's leasing programs have never been tailored to meet any past or present national climate change goals, despite their significant contribution to domestic greenhouse gas emissions.<sup>10</sup>

This Article presents a path forward for Interior's fossil fuel leasing programs that would instill more rationality into the process, with the goal of maximizing social welfare. The approach considered here draws from basic economic principles, including cost-benefit analysis. From an economic perspective, leasing provides potential benefits to taxpayers and consumers from access to fossil fuels. An economic perspective also recognizes the environmental and social harms associated with the extraction, transportation, and consumption of fossil fuels, including the social cost of greenhouse gas emissions. Cost-benefit analysis, then, can serve as a useful tool to weigh the tradeoffs inherent in natural resources management decisions.<sup>11</sup> However, to date, Interior employs cost-benefit analysis sparingly and inconsistently across its leasing

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8. See generally U.S. GOV'T ACCOUNTABILITY OFFICE, GAO-14-140, COAL LEASING: BLM COULD ENHANCE APPRAISAL PROCESS, MORE EXPLICITLY CONSIDER COAL EXPORTS, AND PROVIDE MORE PUBLIC INFORMATION (2013), <https://perma.cc/8MME-ZDPU> [hereinafter GAO, COAL APPRAISAL]; see also THE WHITE HOUSE, OFFICE OF THE PRESIDENT, THE ECONOMICS OF COAL LEASING ON FEDERAL LANDS: ENSURING A FAIR RETURN TO TAXPAYERS (2016), <https://perma.cc/Q5N2-NUU7> [hereinafter "CEA COAL REPORT"].
  9. The third presidential debate included an exchange in which Donald Trump defended his business skills against Hillary Clinton's critiques, saying "[i]f we could run our country the way I've run my company, we would have a country that you would be so proud of." Donald Trump, Presidential Debate at the University of Nevada in Las Vegas (Oct. 19, 2016), <https://perma.cc/B8SK-7PZH>.
  10. On June 1, 2017, President Trump announced that the United States would withdraw from the United Nations "Paris Accord," under which it had previously committed to reduce greenhouse gas emissions by 26 to 28 percent by 2025 against a 2005 baseline; however, the Trump Administration has stated that the United States may be willing to "re-engage" in the agreement under terms more favorable to U.S. interests. Press Release, U.S. Dep't of State, Communication Regarding Intent to Withdraw from Paris Agreement (Aug. 4, 2017), <https://perma.cc/36T6-W8UC>.
  11. Cost-benefit analysis has practical limitations and has been criticized by some legal scholars. Some of these limitations and critiques are discussed in Section II.C, *infra*.

programs. As a result, taxpayers are likely receiving less than they should from a social welfare maximizing perspective.<sup>12</sup>

This Article argues that Interior should conduct a net benefits analysis and account for the social and environmental costs of production by adjusting the fiscal terms of federal leases in making decisions with respect to when, where, and how to lease federal fossil fuels. Because environmental and social externalities vary with the amount of fossil fuels that are produced, these costs can theoretically be recouped through the royalty rate. In this manner, the royalty rate can function as a type of tax levied on an activity that generates negative externalities. Instead of advocating for a strict “keep it in the ground” approach, this Article explores reforms that would likely have the effect of reducing production on marginal tracts where the cost of production—including environmental costs—would outweigh the benefits. The reforms explored here can earn taxpayers more revenue from the resources they own, and better account for the cost of environmental externalities associated with drilling and mining.

This Article proceeds in four parts. Part I reviews the current state of affairs at Interior, focusing on the recent boom in fossil fuel production in the United States and the concomitant regulatory policy lag. The regime governing the fiscal terms for leasing extraction rights on federal lands has been in place for several decades, and the terms of leases have seen little update during that time. Policy has not kept pace with recent developments in the extractive industries, most significantly the large-scale deployment of hydraulic fracturing (“fracking”) technology in oil and gas production that has made production much more efficient, as well as regulatory changes, which have benefitted low-sulfur coal largely produced in federal basins. Problems with uncompetitive bidding for tracts and inefficiently low minimum bids and royalty rates create substantial potential for economic windfalls, especially to coal producers. These windfalls may lead to unjustified transfers of social assets, as well as inefficiently high levels of production of the public’s non-renewable resources. Furthermore, there is no mechanism to account for many significant externalities associated with fossil fuel extraction, transportation, and consumption; existing regulations address some, but not all, of the environmental and social effects of mineral resource extraction.<sup>13</sup> To achieve more efficient levels of fossil fuel extraction, reforms to minimum bids and royalty rates are needed.

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12. Classical economics posits (1) that maximizing net social welfare is desirable; (2) that the market usually lands on efficient equilibria; and (3) that, when the market fails, regulatory intervention may be warranted. See generally N. GREGORY MANKIW, PRINCIPLES OF ECONOMICS 3–16 (7th ed. 2012).

13. There are many complex and interconnected regulatory programs that touch on fossil fuel extraction. The Surface Mining Control and Reclamation Act, 30 U.S.C. §§ 1201–1328 (2012), regulates some of the environmental effects of mining, with a focus on surface reclamation. General environmental statutes, such as the Clean Water Act, 33 U.S.C. §§ 1251–1388 (2012), Clean Air Act, 42 U.S.C. §§ 7401–7515 (2012), and National Envi-

Part II introduces the procedural mechanisms and economic tools at Interior's disposal in managing fossil leasing for public benefit. Unlike a private actor extracting fossil fuels, Interior has the duty to manage federal natural resources for the benefit of current and future generations. Interior is a social decisionmaker stewarding natural resources on behalf of the American public. In addition, Interior is both a major driver of, and significant cost center for, the impacts associated with climate change, such as wildfires, droughts, and reduced snowpack. Procedurally, Interior can develop multiyear plans for leasing and corresponding programmatic environmental impact statements ("EISs") prepared pursuant to the National Environmental Policy Act ("NEPA") to guide its decision-making. Economic tools at Interior's disposal include the Interagency Working Group's Social Cost of Carbon and the Social Cost of Methane, as well as energy substitution analysis that enables it to model potential reforms and changes to its program, including adjustments to lease fiscal terms. These economic tools and methods empower Interior to account for costs that have historically been omitted from its leasing calculus. Interior's offshore leasing program has taken advantage of some of these tools in recent plans and analyses, although imperfectly. Interior's onshore and offshore programs, alike, still suffer from inefficiencies and flaws that render lease sales and long-term planning suboptimal from a social welfare maximizing perspective.

Part III describes how, under several statutes, Interior is charged with managing federal onshore and offshore fossil fuel leasing to private parties. Interior is tasked with ensuring a fair return for the American public for the use of federal resources and with harmonizing resource extraction with environmental and other values. This Part develops the argument that maximizing social net benefits when setting fiscal terms for mineral leases on federal lands is consistent with Interior's legal obligations. The Federal Land Policy and Management Act ("FLPMA") requires that Interior harmonize energy production with environmental preservation and manage public lands in accordance with the principles of "multiple use" and "sustained yield."<sup>14</sup> The Act also requires that Interior earn "fair market value" for the extraction of coal, oil, and natural gas from public lands.<sup>15</sup> The Outer Continental Shelf Lands Act ("OCSLA"), which governs offshore oil and gas production, contains similar provisions and requires preparation of five-year plans for offshore leasing. Interior has considerable discretion to define and effectuate the lofty mandates described in these statutes, pursuant to relevant legal precedent, administrative law doctrine, and

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ronmental Policy Act, 42 U.S.C. §§ 4321–4370m-12 (2012), affect fossil fuel production, as well. These general statutes also govern the consumption of fossil fuels, as in the Clean Air Act's requirements that apply to electricity generating facilities. Each of these legal regimes come with an array of requirements that are administered by multiple federal agencies. This Article focuses on externalities that are not fully regulated by existing statutes or regulations.

14. 43 U.S.C. §1701 (2012).

15. *Id.* § 1701(a)(9).

presidential directives in place since the Reagan Administration that direct agencies to maximize the net benefits of their policy choices. As such, this Article argues that “fair market value” should be interpreted in light of Interior’s obligations to harmonize energy production with other social goals, to include not only the market price of the resource, but also social costs.

Part IV suggests a suite of reforms that should be implemented by Interior in order to run a more strategic program that moves towards maximizing net benefits for American taxpayers. While it may be difficult to implement federal programs that maximize social welfare given practical constraints, such as the influence of incumbent resource owners,<sup>16</sup> this Article highlights viable opportunities for Interior to work towards a more socially optimal leasing framework. Interior should build more rationality into its leasing process at early stages by establishing regular plans for leasing and conducting a net-benefit analysis before moving forward with leasing. Interior should also conduct regular programmatic environmental reviews pursuant to NEPA for all of its fossil fuel leasing programs. As part of this review, Interior should evaluate the fiscal terms of leases and account for at least some of the externality costs of leasing through adjusted royalty rates. As shown by recent empirical studies of coal royalty rate reform, accounting for climate change costs is both feasible and rational. Interior should also enact reforms to its bidding processes to increase competition and help ensure a fair return. The reforms suggested in this Article are designed to benefit all taxpayers, including those in mineral-producing states, and would likely result in less production, fewer greenhouse gas emissions, and more revenue than under existing rules.

The Article concludes with a call to move beyond partisanship in federal energy policy. The reforms noted in this Article have the potential to pay significant dividends to the American public for decades to come by identifying opportunities to increase revenue and reduce greenhouse gas emissions and other externalities.

## I. THE FOSSIL FUEL BOOM AND LEGAL LAG

Interior oversees more than 260 million surface acres and 700 million sub-surface acres of mineral resources onshore, and more than 1.7 billion acres offshore in the waters of the Outer Continental Shelf.<sup>17</sup> Despite its extensive

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16. See Bruce R. Huber, *The Fair Market Value of Public Resources*, 103 CAL. L. REV. 1515, 1521 (2015).

17. U.S. GOV’T ACCOUNTABILITY OFFICE, GAO-14-50, OIL AND GAS RESOURCES: ACTIONS NEEDED FOR INTERIOR TO BETTER ENSURE A FAIR RETURN 2 (2013), <https://perma.cc/CV96-ELRT>. In addition, BLM and the U.S. Forest Service coordinate the leasing of oil and gas rights underlying 192 million acres of National Forest System Lands. U.S. BUREAU OF LAND MGMT. & U.S. FOREST SERV., MEMORANDUM OF UNDERSTANDING BETWEEN THE U.S. DEPARTMENT OF THE INTERIOR BUREAU OF LAND MANAGEMENT

public land and mineral holdings, Interior has consistently been criticized for failing to earn more from its mineral resources and for failing to protect environmental values. This Part provides an overview of modern energy market trends, the existing legal regime governing fossil fuel production on public lands, and recent critiques of federal leasing programs.

### A. *The Fossil Fuel Boom*

Domestic oil and natural gas production has risen steadily for the past ten years, providing an important source of energy and revenue for the federal government and states.<sup>18</sup> Spurred by advances in technology, such as fracking, that have made fossil fuel production more efficient, the United States became the world's top producer of both oil and natural gas in 2015, surpassing Russia and Saudi Arabia.<sup>19</sup>

The United States produced about 90 percent of the energy it consumed in 2014, which reduced energy imports and contributed to a decrease in global energy prices.<sup>20</sup> The U.S. Energy Information Administration ("EIA") projects that domestic crude oil and natural gas production will continue to rise through 2020,<sup>21</sup> and that the United States will become a net oil exporter in high oil price scenarios.<sup>22</sup> The United States became a net exporter of natural gas in 2017, and the EIA projects that this trend will continue into the future.<sup>23</sup>

Federal energy production generates one of the largest non-tax sources of revenue for the United States, accounting for approximately \$6.23 billion in fiscal year 2016.<sup>24</sup> Crude oil royalties account for the greatest share of federal revenue, the majority of which comes from offshore oil production in the Gulf

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AND THE U.S. DEPARTMENT OF AGRICULTURE FOREST SERVICE CONCERNING OIL AND GAS LEASING AND OPERATIONS 2 (Apr. 14, 2006), <https://perma.cc/9LX2-7L33>.

18. Oil production increased 75 percent between 2007 and 2016, and natural gas production increased 32 percent. *Petroleum and Other Liquids*, U.S. ENERGY INFO. ADMIN., <https://perma.cc/55KW-4UMZ>; *Natural Gas*, U.S. ENERGY INFO. ADMIN., <https://perma.cc/4ZUB-29TY>.
19. See Rakteem Katakey, *U.S. Ousts Russia as Top World Oil, Gas Producer in BP Data*, BLOOMBERG BUS., (June 10, 2015), <https://perma.cc/Y3YV-3TS3>.
20. *Id.*
21. U.S. ENERGY INFO. ADMIN., ANNUAL ENERGY OUTLOOK 2017 20 (2017), <https://perma.cc/E4RZ-FJXJ>.
22. See *id.* at 47.
23. U.S. ENERGY INFO. ADMIN., SHORT-TERM ENERGY OUTLOOK: NOV. 2017 tbl.5a (2017) (comparing LNG Gross Imports and Pipeline Gross Imports with LNG Gross Exports and Pipeline Gross Exports), <https://perma.cc/DRB9-U272>; see also U.S. Energy Info. Admin., *United States Expected to Become a Net Exporter of Natural Gas This Year*, TODAY IN ENERGY (Aug. 9, 2017), <https://perma.cc/4CLG-5FET>.
24. Press Release, U.S. Office of Nat. Res. Revenue, Interior Department Disburses \$6.23 Billion in FY 2016 Energy Revenues: Federal Revenues Support State, Tribal, National Needs (Nov. 25, 2016), <https://perma.cc/N9WX-EV6Y>.

of Mexico.<sup>25</sup> Together, coal, oil, and natural gas produced on federal lands account for approximately 25 percent of the total fossil fuels produced annually in United States.<sup>26</sup>

Federal oil and gas production has been decreasing as a share of total U.S. production, as new technology like fracking has greatly increased production in shale basins under state and private ownership.<sup>27</sup> Coal mining on federal lands, by contrast, has grown as a proportion of the domestic total as demand for low-sulfur coal produced predominantly in federal basins increased over the past decade, in response to air quality regulations.<sup>28</sup> In 1960, federal coal accounted for only 1.3 percent of the total coal mined in the United States.<sup>29</sup> In 2015, federal coal accounted for 42 percent of the total coal produced in the United States, the majority of which is produced in Wyoming's Powder River Basin.<sup>30</sup>

In recent years, there has been a decline in coal-fired electricity generation and, consequently, a decline in coal production.<sup>31</sup> Domestic coal consumption is projected to continue to decrease over the next few years, driven by lower natural gas prices, as well as by the retirement of coal-fired power plants in response to deadlines for compliance with the EPA's Mercury and Air Toxics Standards.<sup>32</sup>

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25. U.S. ENERGY INFO. ADMIN., SALES OF FOSSIL FUELS PRODUCED FROM FEDERAL AND INDIAN LANDS, FY 2003 THROUGH FY 2014 9 (2015), <https://perma.cc/AG74-3H3U>. The federal Gulf of Mexico produced 68 percent of total federal and Indian lands crude oil in fiscal year 2014. *Id.* at 1.
  26. *Id.* Coal produced on federal lands accounted for about 40 percent of U.S. total coal production; crude oil and natural gas produced from federal lands account for about 25 percent of U.S. production. OFFICE OF POLICY ANALYSIS, U.S. DEP'T OF THE INTERIOR, U.S. DEPARTMENT OF THE INTERIOR ECONOMIC REPORT FY 2015 1 (2016), <https://perma.cc/WD39-YYXR>.
  27. *See, e.g.*, CONG. RESEARCH SERV., R42432, U.S. CRUDE OIL AND NATURAL GAS PRODUCTION IN FEDERAL AND NON-FEDERAL AREAS (2016) ("Any increase in production of natural gas on federal lands is likely to be easily outpaced by increases on non-federal lands, particularly because shale plays are primarily situated on non-federal lands and are where most of the growth in production is projected to occur.").
  28. U.S. ENERGY INFO. ADMIN., SALES OF FOSSIL FUELS PRODUCED FROM FEDERAL AND INDIAN LANDS, FY 2003 through FY 2014 (2015), <https://perma.cc/HFZ3-LYH4>; U.S. ENERGY INFO. ADMIN., DECEMBER 2015 MONTHLY ENERGY REVIEW 97 (2015), <https://perma.cc/TS5K-U4KP>.
  29. *See* Nat. Res. Def. Council v. Hughes, 437 F. Supp. 981, 983 (D.C. Cir. 1977).
  30. U.S. DEP'T OF INTERIOR, FEDERAL COAL PROGRAM: PROGRAMMATIC ENVIRONMENTAL IMPACT STATEMENT - SCOPING REPORT VOL. I, ES-1 (2017), <https://perma.cc/J9FB-ENS3> [hereinafter COAL PEIS SCOPING REPORT VOL. I].
  31. Coal-fired electricity made up 50 percent of U.S. generation in 2005 and by 2015 had declined to 33 percent. *Id.*
  32. In a 5-4 ruling in June 2015, the U.S. Supreme Court sent the Mercury and Air Toxics Standards back to the D.C. Circuit, finding that EPA should have considered costs when it found that it was "appropriate and necessary" to regulate hazardous air emissions from power plants. *Michigan v. EPA*, 135 S. Ct. 2699 (2015). The Supreme Court left the rule in effect

### B. *The Governing Regime*

Congress granted Interior broad authority to “prescribe necessary and proper rules and regulations and to do any and all things necessary to carry out and accomplish the purposes of” the Mineral Leasing Act.<sup>33</sup> Pursuant to this authority, the Secretary of the Interior has promulgated detailed regulations for oil, gas, and coal leases.<sup>34</sup> If Interior determines that federal land is suitable for leasing, the Act establishes certain terms that all leases must contain, including bid, rental, and royalty provisions.<sup>35</sup>

Interior’s Bureau of Land Management (“BLM”) manages approximately 23,657 active oil, gas, and coal leases on 256 million onshore surface acres and 700 million onshore subsurface acres.<sup>36</sup> Interior’s Bureau of Ocean Energy Management (“BOEM”) manages approximately 8,300 active oil and gas leases across 1.7 billion Outer Continental Shelf offshore acres.<sup>37</sup>

For offshore oil and gas exploration and production, OCSLA grants Interior the power to determine where and when to issue oil and gas leases. The Secretary of the Interior must prepare a five-year program consisting of a schedule of oil and gas lease sales indicating the size, timing, and location of proposed leasing activity that the Secretary determines will best meet national

on remand. EPA requested that the D.C. Circuit keep the rule in place while it addressed the costs. On April 14, 2016, EPA confirmed that it is appropriate and necessary to regulate air toxics, including mercury, from power plants after including a consideration of costs. EPA found that, “the cost of compliance with MATS is reasonable and that the electric power industry can comply with MATS and maintain its ability to provide reliable electric power to consumers at a reasonable cost.” EPA, FACT SHEET: FINAL CONSIDERATION OF COST IN APPROPRIATE AND NECESSARY FINDING FOR THE MERCURY AND AIR TOXICS STANDARDS FOR POWER PLANTS 1 (2016), <https://perma.cc/7MVU-84QJ>.

33. 30 U.S.C. §§ 187, 189 (2015) (federal lands); *see also* 25 U.S.C. §§ 396, 396d (2015) (tribal lands); 43 U.S.C. § 1334(a) (2015) (Outer Continental Shelf).
34. Regulations governing BLM’s coal, oil, and gas programs are found in title 43, subtitle B, chapter II, subchapter C, parts 3000 to 3480 of the Code of Federal Regulations. *See, e.g.*, 43 C.F.R. § 3100 (Onshore Oil and Gas Leasing); 43 C.F.R. § 3160 (Onshore Oil and Gas Operations); 43 C.F.R. § 3400 (Coal Management).
35. *See* 30 U.S.C. §§ 226(b)–(c) (2015).
36. JAYNI FOLEY HEIN, INST. FOR POLICY INTEGRITY, N.Y. UNIV. SCH. OF LAW, HARMONIZING PRESERVATION AND PRODUCTION: HOW MODERNIZING THE DEPARTMENT OF THE INTERIOR’S FISCAL TERMS FOR OIL, GAS, AND COAL LEASES CAN ENSURE A FAIR RETURN TO THE AMERICAN PUBLIC (2015), <https://perma.cc/9297-5EYH>; *see also* U.S. BUREAU OF LAND MGMT., ADVANCE NOTICE OF PROPOSED RULEMAKING: OIL AND GAS LEASING; ROYALTY ON PRODUCTION, RENTAL PAYMENTS, MINIMUM ACCEPTABLE BIDS, BONDING REQUIREMENTS, AND CIVIL PENALTY ASSESSMENTS, 22149 (2015); Steve Tryon, Bureau of Land Mgmt., Presentation to the Production Accountants Society of Oklahoma (Feb. 6, 2013), <https://perma.cc/N37S-ZZMM>.
37. BUREAU OF OCEAN & ENERGY MGMT., OIL AND GAS LEASING ON THE OUTER CONTINENTAL SHELF, <https://perma.cc/7ZCZ-N6V6>.

energy needs.<sup>38</sup> Preparing a five-year program involves an extensive public comment process and requires the Secretary to balance the potential for the discovery of oil and natural gas, the potential for environmental damage, and the potential for adverse effects on the coastal zone.<sup>39</sup> There is an additional public process for each lease sale to determine whether to hold the lease sale, and what terms and conditions will apply to those leases.<sup>40</sup>

Unlike for offshore leasing, Interior does not prepare a five-year program for onshore oil, gas, or coal leasing. Instead, Interior's onshore leasing policy is more reactive in nature, allowing fossil fuel companies to nominate tracts for lease.<sup>41</sup> For onshore fossil fuels, Interior prepares "Resource Management Plans" that establish federal land areas open to oil, gas, and coal leasing. Any parcels in areas identified as suitable for leasing in a Resource Management Plan may be nominated for lease.<sup>42</sup> Once BLM accepts an application for a lease, the agency prepares either an Environmental Analysis ("EA") or EIS required by NEPA.<sup>43</sup> Leases are then sold at auction to the highest bidder.

All federal leases—both onshore and offshore—must provide the American people with "fair market value" for the rights surrendered and the resources extracted.<sup>44</sup> The fiscal components of federal leases primarily consist of three terms: bids (also called "bonus payments"), annual rental payments, and royalties paid for produced resources. Total revenue from federal onshore production is divided evenly between the federal government and each state in which the production takes place.<sup>45</sup> One exception is Alaska, which is entitled to 90 percent of federal royalties for oil, gas, and coal production in the state.<sup>46</sup>

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38. Outer Continental Shelf Lands Act § 18(a)(2), 43 U.S.C. § 1344(a)(2) (2012).

39. *Id.* § 18(a)(3), 43 U.S.C. § 1344(a)(3).

40. *See* 43 U.S.C. § 1337(a)–(b), (l) (2012).

41. Since 1990, all federal coal leasing has taken place through a lease-by-application process. *See* GAO, COAL APPRAISAL, *supra* note 8, at 2.

42. *See Planning and NEPA in the BLM*, U.S. BUREAU OF LAND MGMT., <https://perma.cc/5VH2-3PMT>; *Leasing*, U.S. BUREAU OF LAND MGMT., <https://perma.cc/HGX8-DU9V>; *see also* U.S. BUREAU OF LAND MGMT., PROPOSED RESOURCE MANAGEMENT PLAN AND FINAL ENVIRONMENTAL IMPACT STATEMENT FOR THE BUFFALO FIELD OFFICE (2015) (on file with author). For example, in the May 2015 Buffalo Resource Management Plan, BLM estimated that it would issue 28 coal leases encompassing 106,400 acres with approximately 10.2 billion tons of coal in two "high potential" areas over the next 20 years. *Id.* at 823.

43. Leases are subject to the terms and conditions of the standard lease form and any additional stipulations or lease notices identified in the relevant Resource Management Plan or in site-specific environmental analysis. *See, e.g.*, U.S. BUREAU OF LAND MGMT., FINAL ENVIRONMENTAL ASSESSMENT, DECEMBER 2017 COMPETITIVE OIL AND GAS LEASE SALE 1 (2017), <https://perma.cc/2TXH-Y9JX>.

44. 43 U.S.C. § 1344(a) (2012); 43 U.S.C. § 1701(a)(9) (2012).

45. 30 U.S.C. § 191(a)–(b) (2012).

46. *Id.* Further, Native American tribes and allotment owners are allowed to retain 100 percent of the royalties collected from leases on their lands.

For offshore production, federal Outer Continental Shelf jurisdiction begins three nautical miles from the coast; the coastal state closest to federal offshore production receives 27 percent of revenues from leases in an area extending up to six miles off its coast.<sup>47</sup> Gulf-producing states (defined as Alabama, Mississippi, Louisiana, and Texas) receive up to 37 percent of revenues from certain offshore leases.<sup>48</sup> Coastal states have advocated for greater revenue share due to actual and potential impacts to coastal infrastructure and the environment from fossil fuel production.<sup>49</sup>

### C. Program Deficiencies and Calls for Reform

Interior does not systematically evaluate or update the fiscal terms for oil, gas, and coal production on federal lands.<sup>50</sup> Some of its fiscal terms—including royalty rates for onshore oil and gas production—have not changed since 1920. The U.S. Government Accountability Office (“GAO”) has repeatedly called for Interior to reform its fiscal system, which may be depriving tax payers of hundreds of millions of dollars each year from domestic energy production.<sup>51</sup> And because Interior excludes many environmental and social considerations when setting lease terms, federal leases are currently undervalued from a social welfare-maximizing perspective.<sup>52</sup> While fossil fuel leasing provides valuable public benefits, including revenue and jobs, the environmental and social costs of fossil fuel leasing have traditionally been omitted from Interior’s decision-making

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47. 43 U.S.C. § 1337(g)(5). This provision was included in section 8(g) of the OCSLA amendments of 1985 (Pub. L. No. 99-272, sec. 8003, § 8(g) 100 Stat. 148 (1985)).
48. See Gulf of Mexico Energy Security Act, Pub. L. No. 109-432, 120 Stat. 3001 (2006).
49. See MARC HUMPHRIES, CONG. RESEARCH SERV., NO. R40645, U.S. OFFSHORE OIL AND GAS RESOURCES: PROSPECTS AND PROCESSES 19 (2010).
50. See U.S. GOV’T ACCOUNTABILITY OFFICE, GAO-08-691, OIL AND GAS ROYALTIES: THE FEDERAL SYSTEM FOR COLLECTING OIL AND GAS REVENUES NEEDS COMPREHENSIVE REASSESSMENT 7–10 (2008).
51. *Id.*; U.S. GOV’T ACCOUNTABILITY OFFICE, *supra* note 17; U.S. GOV’T ACCOUNTABILITY OFFICE, GAO-07-676R, OIL AND GAS ROYALTIES: A COMPARISON OF THE SHARE OF REVENUE RECEIVED FROM OIL AND GAS PRODUCTION BY THE FEDERAL GOVERNMENT AND OTHER RESOURCE OWNERS (2007); see also INST. FOR ENERGY ECON. & FIN. ANALYSIS, THE GREAT GIVEAWAY: AN ANALYSIS OF THE COSTLY FAILURE OF FEDERAL COAL LEASING IN THE POWDER RIVER BASIN (2012) (estimating that the federal government lost \$28.9 billion in revenues over 30 years due to BLM’s failure to receive fair market value for coal mined in the Powder River Basin, which produces more than 40 percent of the nation’s coal).
52. This argument is also highlighted in some of my earlier work. See generally JAYNI FOLEY HEIN & PETER HOWARD, INST. FOR POLICY INTEGRITY, N.Y. UNIV. SCH. OF LAW, ILLUMINATING THE HIDDEN COSTS OF COAL (2015), <https://perma.cc/4QRK-M9QY> [hereinafter HEIN & HOWARD, ILLUMINATING COAL COSTS]; JAYNI FOLEY HEIN, INST. FOR POLICY INTEGRITY, N.Y. UNIV. SCH. OF LAW, PRIORITIES FOR FEDERAL COAL REFORM (2016), <https://perma.cc/9A2P-TXP9>.

process, and until recently, unquantified.<sup>53</sup> Some of the most salient issues with respect to Interior's planning processes, fiscal terms, and treatment of environmental externalities are described below.

### 1. *Uncompetitive Leasing*

The Mineral Leasing Act of 1920 and Federal Coal Leasing Amendments Act of 1976 require that federal oil, gas, and coal leases be offered competitively.<sup>54</sup> In 2013, GAO found that approximately 90 percent of all federal coal lease sales since 1990 attracted only one bidder.<sup>55</sup> This is likely the result of a structural issue: coal companies frequently nominate tracts for lease adjacent to their existing coal mines and operations. While this may be efficient from a private company perspective, it all but ensures that there will be minimal competition for new coal leases from different companies, for whom the cost to mine the lease would be much greater. In addition, the Energy Policy Act of 2005 increased the amount of land that can be added to an existing coal lease through noncompetitive lease modification from 160 acres to 960 acres.<sup>56</sup> BLM approved 45 lease modifications from 2000 to 2013.<sup>57</sup>

Low competition is not unique to federal coal; about 40 percent of oil and gas leases in effect as of 2015 were issued noncompetitively, for the minimum bid price of \$2 per acre.<sup>58</sup> Further, all onshore coal, oil, and gas leasing is done by application, which allows private companies to design lease boundaries.<sup>59</sup> Leasing by application permits companies to decide where and when it is privately optimal to locate a mine or well site, rather than where it is socially optimal, which may be very different, given environmental externalities and other factors.

Pursuant to OCSLA, offshore leasing must be done competitively, as well.<sup>60</sup> But Interior commonly offers large regions of the Outer Continental

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53. This problem is not unique to federal fossil fuels. For analysis on the history of environmental cost quantification in regulatory decision-making, *see generally* RICHARD L. REVESZ & MICHAEL A. LIVERMORE, *RETAKING RATIONALITY: HOW COST-BENEFIT ANALYSIS CAN BETTER PROTECT THE ENVIRONMENT AND OUR HEALTH* (2008).

54. 30 U.S.C. § 201(a)(1) (2012).

55. *See, e.g.*, U.S. GOV'T ACCOUNTABILITY OFFICE, *supra* note 17.

56. *See* 30 U.S.C. § 203 (2012); Energy Policy Act of 2005, Pub. L. No. 109-58, § 432, 118 Stat. 594, 761 (2005).

57. U.S. DEP'T OF THE INTERIOR, OFFICE OF INSPECTOR GENERAL, No. CR-EV-BLM-0001-2012, COAL MANAGEMENT PROGRAM 13 (2013), <https://perma.cc/7GMK-LLC7>.

58. Oil and Gas Leasing; Royalty on Production, Rental Payments, Minimum Acceptable Bids, Bonding Requirements, and Civil Penalty Assessments, 80 Fed. Reg. 76 (proposed Apr. 21, 2015) (to be codified at 43 C.F.R. pt. 3100), <https://perma.cc/QYS4-KWTU>. In 2014, about 10 percent of new leases were issued non-competitively. *Id.*

59. *Coal Operations*, U.S. BUREAU OF LAND MGMT. (2016), <https://perma.cc/GBD7-BSTP>.

60. 43 U.S.C. § 1337(p)(3) (2012).

Shelf for lease in single auctions in a practice known as “area wide leasing”; in a 2015 lease sale in the Western Gulf of Mexico, for instance, BOEM offered more than 4,000 tracts for lease; 33 tracts were bid on, and 33 total bids were received.<sup>61</sup> Uncompetitive auctions for oil and gas leases may indicate that the government is offering too many tracts for lease at once.

## 2. Stagnant Minimum Bids and Royalty Rates

Given the lack of robust competition for federal fossil fuel leases, the method Interior uses to set minimum bids, rental rates, and royalty rates determines whether taxpayers receive a fair return. However, minimum bids have failed to even keep up with inflation.<sup>62</sup> Royalty rates have likewise remained stagnant, and, in some cases, have not changed since the passage of the Mineral Leasing Act of 1920.<sup>63</sup> Rental rates have likewise failed to keep pace with inflation.<sup>64</sup>

Interior, through BLM, allocates onshore oil and gas leases for a primary term of 10 years, and coal leases for a primary term of 20 years, through a bidding process.<sup>65</sup> A bid is a one-time payment made to the federal government by the lessee at the time leases are granted. Leases grant the exclusive right to explore, develop, and produce fossil fuels for a specific initial period.

The Mineral Leasing Act, as amended, gives the Secretary of Interior authority to set the national minimum bid for onshore oil and gas leases at \$2 per acre or greater.<sup>66</sup> Interior has allowed the minimum bid for onshore oil and gas to remain at \$2 per acre since 1987.<sup>67</sup> The minimum bid for coal leases has been set at \$100 per acre since 1982.<sup>68</sup> Accounting for inflation, alone, would more than double the minimum bid for coal to \$247 per acre.<sup>69</sup> All leases offered at

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61. DEP'T OF THE INTERIOR, BUREAU OF OCEAN ENERGY MGMT., GULF OF MEXICO OCS REGION, ALL LEASE OFFERINGS (2016), <https://perma.cc/H89X-BBHC>.

62. See *infra* note 69 and accompanying text.

63. Onshore oil and gas royalty rates have been set at 12.5 percent since 1920. See 30 U.S.C. § 226(b)(1)(A) (“A lease shall be conditioned upon the payment of a royalty at a rate of not less than 12.5 percent in amount or value of the production removed or sold from the lease.”).

64. Because rental rates make up a very small portion of revenue from fossil leasing, they are not discussed further in this Article. For discussion of potential rental rate reforms, see HEIN, *supra* note 36.

65. 30 U.S.C. §§ 226 (oil and gas); *id.* § 207(a) (coal).

66. 30 U.S.C. § 226(b)(1)(B) (2012). The Mineral Leasing Act requires that the minimum bid be uniform nationwide, and prohibits BLM from setting minimum bids on a tract-by-tract basis. See *id.*

67. *Id.*

68. See 43 C.F.R. § 3422.1(c)(2) (1982).

69. The minimum bid of \$100 per acre, or the equivalent in cents per ton, was set by regulation in 1982. See *id.* The minimum rental rate of \$3 per acre was set in 1979. See *id.* § 3473.3-1(a).

auction that do not receive any bids are offered the following day in a noncompetitive sale for the minimum bid price.<sup>70</sup> Ideally, the starting bid at an auction should be set at a level to ensure a fair return for U.S. taxpayers.

For both coal and offshore oil and gas leases, Interior also formulates an estimate of the “fair market value” of every lease offered for sale. Interior’s fair market value calculations are confidential and are only used to evaluate the bids received during lease sales.<sup>71</sup> The winning bid is the highest bid that meets or exceeds the tract’s presale estimated fair market value.<sup>72</sup> Interior relies on two approaches to measure “fair market value.” The first approach uses comparable lease sales and prior bids paid in similar mineral rights transaction to assess whether a bid is adequate.<sup>73</sup> The second approach uses projected revenue from the resource over time, under realistic conditions.<sup>74</sup> However, because many leases are uncompetitive, relying on comparable lease sales may perpetuate a pattern of accepting low bids. Further, coal sold overseas often sells at a higher price, yet BLM does not consistently account for export value when estimating coal’s fair market value.<sup>75</sup> In addition, as discussed in Part II, *infra*, these two approaches do not account for the option value, or informational value of delay, of leasing these tracts at a later point in time when their value may be greater, or their environmental costs may be lower, due to better technology, infrastructure, or pollution mitigation techniques.

When a lessee successfully extracts mineral resources from federal land, the federal government is entitled to a royalty on the production. Royalties account for approximately 80 percent of all federal revenue from oil, gas, and coal leases.<sup>76</sup> The royalty rate is a percentage of the value of production; the royalty owed is the volume of production, times the unit value of production, times the royalty rate.

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70. 30 U.S.C. § 226(b)(1)(A) (2012); *see also* 43 C.F.R. § 3110(1)(b) (2016).

71. *Coal Operations*, *supra* note 59; *How it Works: Offshore Oil & Gas*, U.S. EXTRACTIVE INDUS. TRANSPARENCY INITIATIVE, <https://perma.cc/3ZBC-UBF8>.

72. 43 U.S.C. § 1337(a)(1). Winning bids are publicly available. *See, e.g., Powder River Basin Coal Leases by Application*, U.S. BUREAU OF LAND MGMT., <https://perma.cc/D64V-6LR8>.

73. U.S. BUREAU OF OCEAN ENERGY MGMT., 2017–2022 OUTER CONTINENTAL SHELF OIL AND GAS LEASING PROPOSED FINAL PROGRAM, 2–6 (2016), <https://perma.cc/KRV7-MV98> [hereinafter BOEM, 2017–2022 OCS PROPOSED FINAL LEASING PROGRAM]; *see also* U.S. BUREAU OF LAND MGMT., COAL EVALUATION HANDBOOK (2014), <https://perma.cc/AA2D-VMPQ>.

74. BOEM, 2017–2022 OCS PROPOSED FINAL LEASING PROGRAM, *supra* note 73, at 2–4.

75. GAO, COAL APPRAISAL, *supra* note 8; *see also* CLARK WILLIAMS-DERRY, SIGHTLINE INST., UNFAIR MARKET VALUE: BY IGNORING EXPORTS, BLM UNDERPRICES FEDERAL COAL 1 (2014), <https://perma.cc/J4HV-MSAS>.

76. OFFICE OF NAT. RES. REVENUE, REPORTED REVENUES BY CATEGORY: FY 2016 BY ACCOUNTING YEAR (2017), <https://perma.cc/CL2R-62FP> (Select the “Reported Revenues by Category”; adding the reported royalties for federal onshore leasing of coal, oil, and natural gas—including NGLs—returns \$1,982,924,783.00, which is 79.6 percent of \$2,489,690,931.64, the total revenues from these sources.).

The Mineral Leasing Act of 1920 sets a floor for onshore oil and natural gas royalty rates at no less than 12.5 percent of the value of production.<sup>77</sup> BLM issued a new regulation in 2016 allowing it to set royalty rates for competitive leases at or above 12.5 percent, whereas before its regulations set 12.5 percent as a flat rate for all leases.<sup>78</sup> BLM postponed this regulation in June 2017, walking back its flexibility to set higher royalty rates for new and modified leases.<sup>79</sup> A federal district court vacated the agency's postponement of the regulation in October 2017,<sup>80</sup> but BLM has since issued a notice of proposed rulemaking to formally suspend it.<sup>81</sup> For non-competitive leases, the royalty rate is fixed by statute at 12.5 percent.<sup>82</sup> The Mineral Leasing Act and the Federal Coal Leasing Amendments Act set a royalty rate floor for coal production at 12.5 percent of the gross value of the coal produced from surface mines, but allowed the Secretary to set a lower rate for coal produced from underground mines.<sup>83</sup> The current royalty rate for coal produced from underground mines is 8 percent.<sup>84</sup> Interior has the authority to increase the royalty rate for new coal leases, as well as leases that are modified or renewed.<sup>85</sup>

For offshore oil and gas leases, OCSLA provides that Interior must set royalties at or above 12.5 percent.<sup>86</sup> Interior increased the royalty rate for new offshore leases in the Gulf of Mexico from 12.5 percent to 16.67 percent in 2007, and again to 18.75 percent in 2008.<sup>87</sup> Interior made this change in response to technological improvements that made exploration and production more efficient, increased oil and gas prices, and the competitive market for

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77. 30 U.S.C. § 226(b)(1)(A) (2012) (“A lease shall be conditioned upon the payment of a royalty at a rate of not less than 12.5 percent in amount or value of the production removed or sold from the lease.”).
78. Waste Prevention, Production Subject to Royalties, and Resource Conservation, 81 Fed. Reg. 83,008 (Nov. 18, 2016).
79. *See* Waste Prevention, Production Subject to Royalties, and Resource Conservation; Postponement of Certain Compliance Dates, 82 Fed. Reg. 27,430 (June 15, 2017) (postponing certain compliance dates under the Waste Prevention, Production Subject to Royalties, and Resource Conservation Rule, 81 Fed. Reg. 83,008 (Nov. 18, 2016)).
80. *See* *California v. Bureau of Land Mgmt.*, Nos. 17-cv-03804-EDL, 17-cv-3885-EDL, 2017 WL 4416409 (Oct. 4, 2017).
81. *See* Waste Prevention, Production Subject to Royalties, and Resource Conservation; Delay and Suspension of Certain Requirements, 82 Fed. Reg. 46,458 (Oct. 5, 2017).
82. 30 U.S.C. § 226(c) (2012).
83. 30 U.S.C. § 207(a) (2012).
84. 43 C.F.R. § 3473.3-2(a)(2) (2005).
85. *See* 30 U.S.C. § 207(a) (2012); 43 C.F.R. §§ 3473.3-2 (2009), 3432.2(c) (2000). Leases in production are subject to renewal after the first 20 years of production, and every 10 years thereafter. 30 U.S.C. § 207(a) (2012).
86. 43 U.S.C. § 1337(a)(1) (2012).
87. *See* U.S. BUREAU OF OCEAN & ENERGY MGMT., PROPOSED FINAL OUTER CONTINENTAL SHELF OIL & GAS LEASING PROGRAM 2012–2017 96 (2012), <https://perma.cc/NTZ6-HRBQ>. Alaskan offshore leases utilize a 12.5 percent royalty rate. *Id.*

offshore leases.<sup>88</sup> Interior Secretary Ken Salazar said increasing the offshore rate was necessary to ensure that “the American taxpayer is getting a fair return for the oil and gas that the American people own.”<sup>89</sup> Interior estimated that the offshore royalty rate change would increase oil and gas revenues by \$4.5 billion over the next 20 years.<sup>90</sup>

According to some estimates, if onshore federal oil and gas royalty rates were the same as the offshore 18.75 percent rate, the U.S. government would collect an additional \$730 million each year.<sup>91</sup> Many energy-rich states in the United States set royalty rates for fossil fuel production on state lands at between 15 and 20 percent.<sup>92</sup> For example, some oil and gas leases on Texas State University lands use rates of 25 percent;<sup>93</sup> in addition, private royalty rates in states like Texas and Oklahoma range from 18.75 percent to more than 20 percent.<sup>94</sup> A 2008 Government Accountability Office report found that the United States receives one of the lowest overall “takes” worldwide for oil, gas, and coal leases.<sup>95</sup> This is so, even though the United States is an attractive place to do business given its relative political stability, abundant mineral reserves, and ample infrastructure, including oil rigs, refineries, pipelines, and railways.<sup>96</sup>

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88. *Id.* (“Considered in combination with increased resource prices, perceived improvements in discovery and extraction technology, especially in deep water, and the competitive market for OCS acreage, BOEM raised GOM deepwater royalty rates for new leases from 12.5 to 16.67 percent in 2007, then to 18.75 percent in 2008.”).
89. *Interior, Env’t, and Related Agencies Appropriations for 2013, Testimony before the House Comm. on Appropriations, Subcomm. on Interior, Env’t, and Related Agencies*, 102d Cong. 46–47 (2012) (statement of Hon. Ken Salazar, Sec’y of the Interior), <https://perma.cc/U393-8TXE> (“The underlying principle is we are mandated by statute, mandated by fairness to make sure the American taxpayer is getting a fair return for the assets the American people own.”).
90. *See, e.g., CONG. RESEARCH SERV., RL33493, OUTER CONTINENTAL SHELF: DEBATE OVER OIL AND GAS LEASING AND REVENUE SHARING 2* (2008), <https://perma.cc/3UBJ-7XJ8>.
91. *CTR. FOR W. PRIORITIES, A FAIR SHARE: THE CASE FOR UPDATING OIL AND GAS ROYALTIES ON OUR PUBLIC LANDS 7* (2015), <https://perma.cc/4Q8T-YT8P>.
92. *See id.* at 6.
93. *See* 31 TEX. ADMIN. CODE § 9.51(c)(3)(A), Fig.31; *see also* Oil and Gas Lease #116381 Between Texas and Pacesetter Energy Leasing (Mar. 19, 2014), <https://perma.cc/V5NX-Q92Z> (royalty rate of 25%); Oil and Gas Lease #117928 Between Texas and Forge Energy, LLC (Mar. 25, 2016), <https://perma.cc/5KA3-SY95> (royalty rate of 25%).
94. SHANNON FERRELL ET AL., PETROLEUM PRODUCTION ON AGRICULTURAL LANDS IN TEXAS: MANAGING RISKS AND OPPORTUNITIES 4.1.4.1 (2016), <https://perma.cc/QTW9-W87C>.
95. U.S. GOV’T ACCOUNTABILITY OFFICE, GAO-08-691, THE FEDERAL SYSTEM FOR COLLECTING OIL AND GAS REVENUE NEEDS COMPREHENSIVE REASSESSMENT 11 (2008) (citing a June 2007 Wood McKenzie report finding that the United States ranked 93rd lowest out of 104 oil and gas fiscal systems evaluated).
96. *Id.* at 6.

### 3. Ignoring the Cost of Production Externalities

Interior's planning processes and lease terms do not account for the externality costs of oil, gas, and coal produced on federal land. In 1920, when Congress first set minimum royalty rates at 12.5 percent for federal oil and natural gas production, legislators did not understand the direct link between producing, transporting, and burning fossil fuels, all of which emit greenhouse gases, and climate change, with its effects on human and environmental health and wellbeing. Today, the connection is clear; scientific understanding of the environmental impacts of fossil fuel production has advanced and economic tools to measure the cost of these impacts, such as the Social Cost of Carbon and Social Cost of Methane, have been used by several federal agencies to measure the costs and benefits of proposed regulations.<sup>97</sup>

Because environmental externalities vary with the amount of fossil fuels that are produced, these costs could theoretically be recouped through the royalty rate (as opposed to minimum bids which are paid prior to actual production). In this manner, the royalty rate can be used as type of Pigouvian tax: a tax levied on an activity that generates negative externalities.<sup>98</sup>

This Article focuses its recommendations on "upstream" externalities that stem directly from production on federal lands at the mine or well site, as opposed to "downstream" externalities from coal, oil, and natural gas combustion. Many upstream externalities are not addressed by existing regulations and therefore represent uncompensated social and environmental costs. Further, by focusing recommendations on upstream externalities, this Article avoids any potential "double counting" of greenhouse gas emission costs that could come into play if other regulations, like EPA's Clean Power Plan, target downstream combustion emissions.<sup>99</sup>

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97. See, e.g., Paul R. Epstein, et al., *Full Cost Accounting for the Life Cycle of Coal*, 1219 ANNALS N.Y. ACAD. SCI. 73 (2011) (tabulating and describing a wide range of costs associated with the full life cycle of coal, including greenhouse gas emissions). See Part II, *infra*, for a description of the Social Cost of Carbon and Social Cost of Methane.

98. Economist Arthur Pigou suggested that governments should tax polluters an amount equivalent to the cost of the harm to others. See generally ARTHUR PIGOU, *THE ECONOMICS OF WELFARE* (1920); see also David D. Haddock, *The Relevant Theory of Irrelevant Externalities: Buchanan, Coase, and Pigou*, 10 J.L. ECON. & POL'Y 689, 697–98 (2014). In the case of fossil fuel royalties, the Pigouvian tax would be imposed as an ad valorem tax (a percentage of the good's market price). See Mark Dickie & Gregory A. Trandel, *Comparing Specific and Ad Valorem Pigouvian Taxes and Output Quotas*, 63 S. ECON. J. 388, 389 (1996).

99. The status of EPA's Clean Power Plan is uncertain as of the date of this article. The Trump Administration has proposed a repeal of the regulation, and reports suggest that EPA is likely to develop a replacement rule that would place targets for emissions reductions at the power plant level or "inside the fence line" rather than set limits for carbon emissions across the energy sector. See Niina Heikkinen, *Clean Power Plan: 4 Things to Watch*, E&E NEWS (Aug. 24, 2017), <https://perma.cc/A8GQ-6924>. On November 9, 2017, the D.C. Circuit Court of Appeals rejected a request by the Trump Administration to indefinitely suspend

The oil and gas industry is the nation's largest industrial source of methane pollution.<sup>100</sup> The United States loses at least 1 to 3 percent of its total natural gas production each year when methane, a potent greenhouse gas, is leaked, flared (burned), or vented to the atmosphere during natural gas and oil production and distribution.<sup>101</sup> Oil and gas production also contributes to smog, particulate matter emissions, and hazardous air pollution.<sup>102</sup> Injection wells used to dispose fracking wastewater can induce earthquakes.<sup>103</sup> Wildlife habitat is impaired by drilling infrastructure. Oil and gas production use large quantities of fresh water, which is an externality in regions without efficient water markets.<sup>104</sup>

Vented and flared methane is also a waste of a valuable resource: natural gas.<sup>105</sup> The Mineral Leasing Act directs Interior to "use all reasonable precautions to prevent waste of oil or gas developed in the land,"<sup>106</sup> yet taxpayers lose as much as \$23 million in royalty revenue from fugitive methane emissions each year.<sup>107</sup> In November 2016, BLM finalized a rule governing venting and flaring on federal lands, which was expected to reduce methane emissions by 41 to 60 percent.<sup>108</sup> However, BLM has since stayed implementation of this rule;<sup>109</sup> and

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litigation while EPA plans its next steps. See Press Release, *Envtl. Def. Fund, D.C. Circuit Rejects Trump Administration Request to Indefinitely Delay Clean Power Plan Litigation* (Nov. 9, 2017), <https://perma.cc/U867-YJUH>.

100. *Overview of Greenhouse Gases, Methane*, EPA, <https://perma.cc/53W7-QRVY>.
101. See EPA, *INVENTORY OF U.S. GREENHOUSE GAS EMISSIONS AND SINKS: 1990–2012* (2014), <https://perma.cc/V9Y3-9K8V>.
102. See Mead Gruver, *Wyoming's Natural Gas Boom Comes with Smog Attached*, ASSOCIATED PRESS (Mar. 9, 2011), <https://perma.cc/CMD3-NYRB>; Waste Prevention, Production Subject to Royalties, and Resource Conservation, 81 Fed. Reg. 83,008, 83,014 (Nov. 18, 2016).
103. A University of Texas study found that earthquakes occurred more frequently near injection well sites in the Barnett Shale region. Cliff Frohlich, *Two-Year Survey Comparing Earthquake Activity and Injection-Well Locations in the Barnett Shale, Texas*, 109 PROCEEDINGS NAT'L ACAD. SCI. 13,934 (2012).
104. Groundwater is a common resource, and as such suffers from a tragedy of the commons in regions without efficient water markets or direct regulation of groundwater withdrawals. See, e.g., Paula K. Smith, *Coercion and Groundwater Management: Three Case Studies and a "Market" Approach*, 16 ENVTL. L. 797, 805–12 (1986) (discussing groundwater resources as "a well recognized commons").
105. Methane is the primary component of natural gas. *Overview of Greenhouse Gases, Methane*, EPA, <https://perma.cc/53W7-QRVY>.
106. 30 U.S.C. § 225 (2012).
107. BUREAU OF LAND MGMT., *REGULATORY IMPACT ANALYSIS FOR: REVISIONS TO 43 CFR 3100 (ONSHORE OIL AND GAS LEASING) AND 43 CFR 3600 (ONSHORE OIL AND GAS OPERATIONS) ADDITIONS OF 43 CFR 3178 (ROYALTY-FREE USE OF LEASE PRODUCTION) AND 43 CFR 3179 (WASTE PREVENTION AND RESOURCE CONSERVATION) 2* (2016), <https://perma.cc/RWU3-DUVP> (also on file with author).
108. *Id.* at 9 (describing expected impact of rule); see also Waste Prevention, Production Subject to Royalties, and Resource Conservation Rule, 81 Fed. Reg. 83,008 (Nov. 18, 2016).

even with the new standards in place, some methane and carbon dioxide would still be released into the atmosphere.<sup>110</sup>

Coal mining accounts for about 10 percent of domestic methane emissions.<sup>111</sup> Unlike for oil and gas, BLM does not regulate methane emissions from coal production. Coal mining also emits other air pollutants and has the potential to pollute waterways and sensitive habitat with acid mine drainage and other byproducts. It also uses a significant amount of water for dust control, extraction, and processing.<sup>112</sup>

For offshore oil and gas development, environmental externalities include the risk of oil spills arising from accidents; improper treatment and disposal of produced wastewater; air pollution, including methane emissions and hazardous air pollutants; and habitat disruption, including seabed impacts and marine mammal ship-strike mortality.<sup>113</sup> Other externalities include negative effects on commercial fisheries, subsistence fishing, and tourism if there is a large offshore oil spill, as witnessed with the BP Deepwater Horizon disaster.<sup>114</sup>

The transportation of coal, oil, and gas also results in externalities, including greenhouse gas and particulate matter emissions, rail congestion, fatalities, noise, and congestion.<sup>115</sup> In fact, up to 70 percent of all rail traffic in the United

109. *See* Waste Prevention, Production Subject to Royalties, and Resource Conservation; Postponement of Certain Compliance Dates, 82 Fed. Reg. 27,430 (June 15, 2017) (postponing certain compliance dates under the Waste Prevention, Production Subject to Royalties, and Resource Conservation Rule, 81 Fed. Reg. 83,008 (Nov. 18, 2016)).
110. Further, these standards were not calibrated to maximize social welfare by requiring companies to capture all of the methane that is cost-benefit justified from a social welfare maximizing perspective. *See id.*; *see also* Inst. For Policy Integrity, Comments on Proposed Rule for Waste Prevention, Production Subject to Royalties, and Resource Conservation (Nov. 6, 2017), <https://perma.cc/5CT9-KZG8>.
111. During coal mining, methane escapes into the atmosphere through fissures, surface air exposure, and venting. *See* EPA, INVENTORY OF U.S. GREENHOUSE GAS EMISSIONS AND SINKS: 1990–2013 2-4-2-9 (2015), <https://perma.cc/Z8PE-48HM>.
112. The Department of Energy estimates that U.S. coal mining uses approximately 70 to 260 million gallons of water per day, with average uses of 10 gallons per ton of coal mined on the surface in the West, and 100 gallons per ton of coal mined underground in Appalachia. U.S. DEP'T OF ENERGY, ENERGY DEMANDS ON WATER RESOURCES: REPORT TO CONGRESS ON THE INTERDEPENDENCY OF ENERGY AND WATER 20 (2006), <https://perma.cc/2H4E-UTKY>.
113. *See* BUREAU OF OCEAN ENERGY MGMT., OUTER CONTINENTAL SHELF OIL AND GAS LEASING PROGRAM: 2017–2022 FINAL PROGRAMMATIC ENVIRONMENTAL IMPACT STATEMENT 4-86-4-110 (2016), <https://perma.cc/Z435-8475>.
114. *See id.* at 4-186-4-189.
115. U.S. freight railroads carried more than 400,000 carloads (or 280 million barrels) of crude oil in 2013, compared to just 9500 carloads (or 6.65 million barrels) in 2011. CONG. RESEARCH SERV., R43390, U.S. RAIL TRANSPORTATION OF CRUDE OIL: BACKGROUND AND ISSUES FOR CONGRESS 1 (2014), <https://perma.cc/3FUN-MCYY>. In Wyoming, more than 90 percent of coal is transported by rail out of the state for use in power plants. U.S. ENERGY

States is dedicated to shipping coal.<sup>116</sup> Offshore, transportation of oil by barge increases the risk of oil spills, and also contributes greenhouse gas emissions.<sup>117</sup>

Failure to account for the externality costs of fossil fuel production through regulation, lease-specific mitigation requirements,<sup>118</sup> or adjustments to fiscal lease terms means that the public bears the burden of mitigating and adapting to such costs, including greenhouse gas emissions—the effects of which will continue to be felt decades from now. As a consequence, the market price of fossil fuels is less than the socially optimal price, which leads to inefficiently high levels of extraction. In other words, failure to account for the environmental costs of production prioritizes short-term fossil fuel industry profits over long-term public welfare.

#### 4. Royalty Rate Loopholes and Deductions

Relevant to the question of whether royalties are properly structured to ensure a fair return is how royalties are calculated, including whether any deductions or loopholes affect the overall return to the public. Coal, oil, and gas lessees can apply for a royalty rate reduction if the current royalty rate imposes economic hardship that would otherwise result in abandoning the lease, or in less than full recovery of the resource.<sup>119</sup>

Royalty rate reductions occurred on approximately 36 percent of coal leases offered for sale since 1990.<sup>120</sup> The Government Accountability Office found that the reported rate that lessees pay ranged from 5.6 percent for federal leases in Colorado to 12.2 percent in Wyoming.<sup>121</sup> The lower reported rates were largely a function of rate reductions. Lessees are also allowed to deduct transportation and washing costs from the sale price upon which federal royalties are calculated, which reduces incentives for companies to find the most efficient mode of transportation.<sup>122</sup> These royalty rate reductions and deduc-

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INFO. ADMIN., ANNUAL COAL DISTRIBUTION REPORT 2013 42–43 (2015), <https://perma.cc/9ZC7-256R>.

116. *Id.*; Epstein, et al., *supra* note 97, at 75.

117. BOEM, 2017–2022 OCS PROPOSED FINAL LEASING PROGRAM, *supra* note 73, at S-5.

118. See George Pring, “Power to Spare”: Conditioning Federal Resource Leases to Protect Social, Economic, and Environmental Values, 14 NAT. RESOURCES L. 305, 307–08 (1981) (arguing that the federal government has the power and the legal duty to regulate environmental impacts through lease conditions).

119. For coal, see 30 U.S.C. § 209 (2012); 43 C.F.R. §§ 3473.3-2(e), 3485.2(c)(1) (2012). For oil and gas, see 43 C.F.R. § 3103.4-1(a) (2015).

120. MARK HAGGERTY, HEADWATERS ECONOMICS, AN ASSESSMENT OF U.S. FEDERAL COAL ROYALTIES: CURRENT ROYALTY STRUCTURE, EFFECTIVE ROYALTY RATES, AND REFORM OPTIONS 8 (2015), <https://perma.cc/7KEN-P3WS>.

121. GAO, COAL APPRAISAL, *supra* note 8, at 25.

122. See 30 C.F.R. § 1206.109 (2012) (oil and gas transportation); 30 C.F.R. § 1206.261 (2013) (coal transportation); 30 C.F.R. § 1206.258 (2013) (coal washing). As a practical matter, the

tions distort the energy market by subsidizing coal, oil and gas production, even when production may be uneconomical.

### 5. *The Disconnect Between Fossil Fuel Leasing and Climate Change Goals*

Interior's fossil fuel leasing programs operate separately from any past or present U.S. climate change goals. The plans and environmental reviews developed for these programs have never offered a strategy for reducing greenhouse gas emissions in line with past targets such as the United States' Intended Nationally Determined Contribution ("INDC") submitted to the United Nations Framework Convention on Climate Change for the 2015 Paris Climate Change 21st Conference of Parties. While the Trump Administration has announced its intention to withdraw from the Paris agreement,<sup>123</sup> the U.S. target had been to reduce greenhouse gas emissions by 26 to 28 percent below 2005 levels by 2025, and to make best efforts to reduce emissions by 28 percent.<sup>124</sup>

Fossil fuels produced from public lands, including their downstream combustion emissions, account for as much as 21 percent of all domestic greenhouse gas emissions.<sup>125</sup> Federal coal, alone, contributes approximately 10 percent of the nation's total greenhouse gas emissions.<sup>126</sup> As discussed in Part IV, *infra*, Interior should track these emissions in a public database and develop leasing plans that align leasing with any potential domestic climate change goals. As other efforts to curb greenhouse gas emissions appear unlikely to gain traction under the new administration, the fiscal reforms discussed here—which may also have the effect of increasing revenue—have the potential to become even more significant drivers of greenhouse gas emission reductions.

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coal transportation deduction is used sparingly by coal producers, as most companies sell their coal at the mine mouth, making transportation costs irrelevant to royalty assessments. See 30 C.F.R. § 1206.261 (2013). However, if Interior changes the point of valuation to the final delivery point (market price) or another point remote from the coal mine, transportation costs will become relevant to royalty payments. In such a scenario, the transportation deduction would reduce incentives to find the most efficient and lowest-cost mode of transportation, and subsidize coal production and transport over other energy sources.

123. Ari Natter, *Donald Trump Notifies UN of Paris Exit While Keeping Option to Return*, TIME (Aug. 5, 2017), <http://perma.cc/78LT-8TBV>.
124. Press Release, The White House, Office of the Press Sec'y, Fact Sheet: U.S. Reports Its 2025 Emissions Target to the UNFCCC (Mar. 31, 2015), <https://perma.cc/25GR-JFF8>.
125. STRATUS CONSULTING, GREENHOUSE GAS EMISSIONS FROM FOSSIL ENERGY EXTRACTED FROM FEDERAL LANDS AND WATERS: AN UPDATE 1, 11 (2014), <https://perma.cc/8UBW-HH2K>.
126. COAL PEIS SCOPING REPORT VOL. I, *supra* note 30, at 6-4 ("When combusted, this Federal coal contributes roughly 10 percent of total US greenhouse gas emissions.")

#### D. *Planting the Seeds of Reform*

In January 2016, Interior announced that it would pause all new coal leasing and launch a comprehensive review of the federal coal program—the first programmatic review conducted in over 30 years—to identify reforms that would better account for the environmental costs of coal production.<sup>127</sup> In its Programmatic EIS, Interior planned to address the issue of a fair return to taxpayers, as well as “whether the current Federal coal leasing program adequately accounts for externalities related to Federal coal production, including environmental and social impacts.”<sup>128</sup> Interior’s Scoping Report, released in January 2017, laid out options for further analysis through the review process, including many of the reforms suggested in this Article: increasing the federal coal royalty rate; assessing a carbon-based “externality adder” to be applied to the royalty rate; limiting the use of royalty rate reductions; increasing minimum bids and rental rates; and implementing an inter-tract bidding process to increase competition for leases.<sup>129</sup>

Interior’s effort to review the federal coal program underscores the need to comprehensively examine its fossil fuel leasing programs. However, the Trump Administration moved swiftly to terminate the programmatic review and resume coal leasing according to the pre-existing, outdated terms.<sup>130</sup> This Article highlights the rationality of modernizing Interior’s leasing programs even with the shift in presidential administrations. The following sections explore how Interior can use modern economic tools to advance a social welfare-maximizing framework that aligns with Interior’s statutory mandates.

## II. INTERIOR, AS THE STEWARD OF PUBLIC LANDS, SHOULD MAXIMIZE NET SOCIAL BENEFITS WHEN LEASING

This Part introduces Interior’s role as steward of public lands for the benefit of the public. It then describes the procedural and economic tools available to Interior in carrying out a federal program that attempts to maximize social welfare, including comprehensive planning processes, balanced cost-benefit analysis, the Social Cost of Carbon, energy substitution analysis, and option value. Interior’s offshore leasing program has taken advantage of some of these

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127. See U.S. DEP’T OF THE INTERIOR, SECRETARIAL ORDER NO. 3338, 1 (2016).

128. *Id.* at 7–8.

129. COAL PEIS SCOPING REPORT VOL. I, *supra* note 30, at 6–6. The Scoping Report and its appendix cites some of my earlier work that recommends many of these changes. See *id.* at 5–46, 5–47; U.S. DEP’T OF THE INTERIOR, FEDERAL COAL PROGRAM: PROGRAMMATIC ENVIRONMENTAL IMPACT STATEMENT - SCOPING REPORT APPENDICES VOL. II (Jan. 2017), <https://perma.cc/HGV9-EJP6>.

130. Exec. Order, No. 13738, 82 Fed. Reg. 16,093, 16,096 (Mar. 31, 2017); U.S. DEP’T OF THE INTERIOR, SECRETARIAL ORDER NO. 3348 (2017), <https://perma.cc/4UER-NZAD>.

tools; however, both its onshore and offshore programs would benefit from modernization in order to move towards maximizing social welfare.

### A. Interior's Public Stewardship Posture

The Department of the Interior is a social decisionmaker acting on behalf of the public, to whom the nation's mineral resources belong. Interior has a dual mandate to manage development of resources while ensuring adequate protection of environmental and social values. Congress was unequivocal in tasking Interior with managing federal energy resources in order to benefit the public. The Mineral Leasing Act provides that the Secretary of the Interior can include coal, oil, or gas lease terms that he or she deems necessary "for the safeguarding of the public welfare."<sup>131</sup> FLPMA requires agencies to manage public lands in accordance with the "principles of multiple use,"<sup>132</sup> which are defined, in part, as: "meet[ing] the present and future needs of the American people."<sup>133</sup> With respect to offshore resources, the congressional statement of policy in the Outer Continental Shelf Lands Act declares that the Outer Continental Shelf is a vital natural resource held in trust by the federal government for the benefit of the American people, and directs Interior to balance economic, environmental, and social values in managing offshore resources.<sup>134</sup>

Interior's public stewardship posture distinguishes it from a private fossil fuel developer operating on privately owned land. While, as a matter of property law, lessees are generally expected to compensate lessors for many negative impacts to property,<sup>135</sup> Interior is not just any property owner and lessor; it is tasked with managing lands for the benefit of current and future generations, and it is directed to balance economic, environmental, and social values in managing resources. Ensuring the optimal rate and terms of mineral resource extraction on public land is akin to solving a principal-agent problem: the government (the principal) directs a fossil fuel firm (the agent) to efficiently extract the resource and return economic profits to the government.<sup>136</sup> Under another possible model, the government could itself extract natural resources on public lands, taking into account direct and indirect costs of production, and address negative externalities by choosing to forego or limit development of resources. In reality, the government does not extract the resources for itself and

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131. 30 U.S.C. § 187 (2012).

132. 43 U.S.C. § 1712(a)–(c)(1) (2012).

133. *Id.* § 1702(c).

134. 43 U.S.C. § 1332(3) (2012).

135. See MICHAEL BURGER, SABIN CTR. FOR CLIMATE CHANGE LAW, COLUMBIA LAW SCH., EXECUTIVE SUMMARY: A MITIGATION-BASED RATIONALE FOR INCORPORATING A CLIMATE CHANGE IMPACTS FEE INTO THE FEDERAL COAL LEASING PROGRAM, 2 (2016), <https://perma.cc/42C8-TY9Z>.

136. See CEA COAL REPORT, *supra* note 8, at 10.

instead relies on private firms to do so.<sup>137</sup> This presents issues with respect to efficiently managing the externalities from production and determining the ideal timing of resource extraction, as private firms may have different incentives than the federal government in terms of conservation, timing, and externalities.

Interior is also distinct from a private landowner as its public lands are both a major driver of, and significant cost center for, the impacts associated with climate change, such as more frequent and severe wildfires, droughts, floods, and reduced snowpack. As just one example, climate change has led to fire seasons that are now on average 78 days longer than in 1970.<sup>138</sup> Interior must mitigate and adapt to climate change impacts on its more than 260 million onshore surface acres and 1.7 billion offshore acres. Interior has a greater incentive to manage production in order to reduce greenhouse gas emissions than a private actor does, as it will bear more of the cost of those emissions directly.

It is up to Interior to set rules and frameworks for how it leases public lands to private parties for resource extraction in order to uphold its statutory mandates to earn “fair market value” for the public and to harmonize energy production with resource conservation.<sup>139</sup> This Article argues that when the government is the mineral owner, its objective should be to develop the resource in such a manner as to generate maximum net benefits to the public. As explored in Part III, *infra*, this framework is consistent with Interior’s statutory mandates, legislative history, and executive orders for agency decision-making that direct agencies to maximize the net benefits of their policy choices. In order to maximize net social benefits when leasing, Interior must first ensure that the benefits of leasing outweigh the costs—including externality costs. It should also assess whether revisions to its fiscal terms, timing of lease sales, and other factors can increase the net benefits of leasing. This section provides information on the planning and economic tools at Interior’s disposal in managing its fossil fuel leasing programs for the benefit of the public.

### B. *Leasing Plans and Programmatic Environmental Impact Statements*

Interior should develop multi-year plans for leasing and corresponding programmatic EISs prepared pursuant to NEPA to guide its decision-making.

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137. *See id.* at 10; *see generally* Jayni Foley Hein & Caroline Cecot, *Mineral Royalties: Historical Uses and Justifications*, 28 DUKE ENVTL. L. & POL’Y F. 1 [hereinafter Hein & Cecot, *Mineral Royalties*].

138. An increasing portion of the U.S. Forest Service budget is directed to fighting wildfires on public lands. *See* U.S. DEP’T OF AGRIC., *THE RISING COST OF WILDFIRE OPERATIONS: EFFECTS ON THE FOREST SERVICE’S NON-FIRE WORK 2* (2015), <https://perma.cc/Y3PX-QEDU>.

139. 43 U.S.C. §§ 1344(a)(3)–(4), 1701(a)(8)–(9) (2012).

Yet as described in Part I, *supra*, Interior does not prepare regular strategic leasing plans or programmatic EISs for its onshore oil, gas, or coal leasing programs. This has resulted in uncompetitive programs that do not adequately serve the public interest.

NEPA requires federal agencies to take a “hard look” at the environmental consequences of a proposed activity before taking action.<sup>140</sup> Agencies are required to prepare EISs for all “major Federal actions significantly affecting the quality of the human environment.”<sup>141</sup> EISs must contain, among other elements, a statement of the purpose of and need for the action, and a discussion of alternatives to the proposed action.<sup>142</sup> Alternatives analysis is the “heart” of the environmental review process.<sup>143</sup> Programmatic EISs, which are subject to the same requirements as EISs, assess the environmental impacts of proposed policies, plans, programs, or projects for which subsequent actions will be implemented.<sup>144</sup> Programmatic EISs can frame the scope of subsequent project-specific federal actions, identify geographically bounded areas within which future proposed activities can be taken, identify broad mitigation or conservation measures that can be applied to subsequent projects and their NEPA reviews, and analyze feasible alternatives to the way current programs are managed.<sup>145</sup>

One model for how Interior can instill more rationality into its lease planning process is BOEM’s five-year planning process for offshore oil and gas leasing. The Outer Continental Shelf Lands Act requires BOEM to prepare a five-year Program that establishes a schedule of oil and gas lease sales in planning areas of the U.S. Outer Continental Shelf.<sup>146</sup> The Program specifies the size, timing, and location of potential leasing activity that the Secretary of the Interior determines will best meet national energy needs. Because the implementation of the five-year Program will have significant environmental and social effects, BOEM also prepares a programmatic EIS for each proposed Program, as required by NEPA. BOEM’s programmatic EIS analyzes the potential environmental impacts of the activities that may result from the lease sale schedule as identified in BOEM’s Draft Program; considers a reasonable range of alternatives to the proposed lease sale schedule (including a “no sale” option); and identifies opportunities for mitigation.

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140. 42 U.S.C. § 4332(C) (2012).

141. *Id.*

142. *Id.*; 40 C.F.R. § 1502.14 (1978).

143. 40 C.F.R. § 1502.14.

144. WHITE HOUSE COUNCIL ON ENVTL. QUALITY, EFFECTIVE USE OF PROGRAMMATIC NEPA REVIEWS 7 (2014), <https://perma.cc/93PR-JTJ>. “Programmatic NEPA reviews are governed by the same regulations and guidance that apply to non-programmatic NEPA reviews.” *Id.*

145. *See id.* at 10; *see also* Robertson v. Methow Valley Citizens Council, 490 U.S. 332, 350 (1989).

146. Outer Continental Shelf Lands Act, 43 U.S.C. § 1344 (2012).

Interior's decision to initiate a programmatic EIS for the federal coal program in 2016 is another example of the type of analysis that can and should be done regularly to determine whether taxpayers are receiving "fair market value" and whether the program is aligned with climate change or other environmental goals. Prior to 2016, the last time that the federal coal program was reviewed was 1986.<sup>147</sup> Such a review should be done far more frequently than every 30 years in order to keep pace with environmental knowledge, changes in the energy market, new technology, and more.

Interior should exert more control over where, when, and on what terms any leasing occurs, in order to run a more competitive program that appropriately balances federal land uses and provides maximum net benefits to the American public. Preparing strategic plans and programmatic EISs on a regular schedule would enable Interior to better weigh the trade-offs between competing uses of federal lands, as it must do under its "multiple use" mandate; analyze viable leasing alternatives and their environmental and social impacts; monitor changing market conditions; and evaluate lease timing and fiscal terms in order to manage a program that best serves the public interest.

### C. *Calculating the Net Social Benefits of Leasing*

Key to maximizing social welfare, Interior should not lease any fossil fuels to private companies for extraction unless the social benefits of doing so outweigh the costs. Interior can determine whether this is the case by conducting a cost-benefit analysis of its leasing programs that accounts for the externality costs of production.

Cost-benefit analysis has limitations. It requires assigning monetized values to non-market benefits and costs, which can be difficult or even impossible in some cases (such as valuing the loss of a species). Moreover, in some cases, a policy may be desirable even if the quantifiable benefits to society do not outweigh its costs, particularly if there are ethical or equity concerns. The use of cost-benefit analysis in environmental policy has been criticized on these and other grounds.<sup>148</sup> Despite these critiques and limitations, cost-benefit analysis can provide a useful framework for comparing the social costs and benefits of

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147. COAL PEIS SCOPING REPORT VOL. I, *supra* note 30, at 5–7.

148. See, e.g., David M. Driesen, *The Societal Cost of Environmental Regulation: Beyond Administrative Cost-Benefit Analysis*, 24 *ECOLOGY L.Q.* 545 (1997); Thomas O. McGarity, *A Cost-Benefit State*, 50 *ADMIN. L. REV.* 7 (1998); Amy Sinden, *Cass Sunstein's Cost-Benefit Lite: Economics for Liberals*, 29 *COLUM. J. ENVTL. L.* 191 (2004); FRANK ACKERMAN & LISA HEINZERLING, *PRICELESS* 234 (2004) ("Cost-benefit analysis of health and environmental policies trivializes the very values that gave rise to those policies in the first place."). In addition, increasing overall societal well-being need not be the only goal of policymaking. It may be weighed against other considerations, such as distributive concerns. See, e.g., John Bronsteen et al., *Well-Being Analysis vs. Cost-Benefit Analysis*, 62 *DUKE L.J.* 1603, 1612 n.41 (2013).

proposed agency actions. This is especially true in light of advancements in calculating environmental costs, such as the Social Cost of Carbon.<sup>149</sup> Where, as here, federal agencies are directed by statute to manage federal fossil fuels in order to earn “fair market value” for the public, they can improve their decision-making by using balanced cost-benefit analysis that accounts for social and environmental costs and benefits, as well as “economic,” or market based, costs and benefits.

BOEM’s practice of calculating the “net social value” of offshore leasing in each area of the Outer Continental Shelf before keeping that area in its final program is a good starting point for illustrating how balanced cost-benefit analysis can be applied to fossil fuel leasing decisions. OCSLA requires BOEM to balance economic, environmental, and social values when managing offshore oil and gas leasing.<sup>150</sup> To help fulfill this mandate, the agency calculates the projected net benefits of leasing in each identified offshore region, as compared to not offering any tracts for lease in that region.<sup>151</sup> The D.C. Circuit Court of Appeals has upheld BOEM’s methodology for calculating net social value, which uses a cost-benefit analysis that begins by calculating each planning area’s “net economic value” (the market value of expected resources less the cost of production and transportation) minus environmental and social costs.<sup>152</sup> BOEM then compares the net benefits of producing oil and gas from the program areas to the net benefits of the “no leasing” alternative to calculate the incremental net benefits, if any, of including each area in the program.<sup>153</sup>

BOEM’s net benefit analysis is a useful starting point, but it should not be the end point. Notably, in its Proposed Final Offshore Leasing Program for 2017–2022, BOEM’s net benefit analysis did not account for the cost of greenhouse gas emissions from oil and natural gas production, transport, processing, and consumption.<sup>154</sup> BOEM did analyze life cycle greenhouse gas emissions and their costs, but it never factored these costs into its net benefits calculation,

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149. More broadly, cost-benefit analysis contributes useful information to the decision-making process about how scarce resources can be valued and put to the best social use, including production or preservation. See EPA, GUIDELINES FOR PREPARING ECONOMIC ANALYSES A-6-A-7 (2010), <https://perma.cc/R6MX-VGDA>.

150. 43 U.S.C. § 1344(a)(1) (2012).

151. See, e.g., BOEM, 2017–2022 OCS PROPOSED FINAL LEASING PROGRAM, *supra* note 73, at 5-11–5-13, 5-20–5-21.

152. *California v. Watt (Watt II)*, 712 F.2d 584 (D.C. Cir. 1983). The Court also found that receipt of fair market value does not mean “maximization of revenues.” *Id.* at 606; see also *Nat. Res. Def. Council v. Hodel*, 865 F.2d 288, 306–08 (D.C. Cir. 1988) (upholding the agency’s use of cost-benefit analysis, as well as qualitative factors, to determine which areas to include in an offshore leasing program). These cases are described further in Part III.

153. See BOEM, 2017–2022 OCS PROPOSED FINAL LEASING PROGRAM, *supra* note 73, at 5-13, 5-18, 5-20.

154. BOEM states: “The Net Benefits Analysis omits several conceivable effects of OCS oil and gas development, including, for both the PFP sale options and the No Sale Options, the

as it ultimately concluded that greenhouse gas emissions in the lease sale and “no action” scenarios would be very similar, due to energy substitution.<sup>155</sup> However, BOEM’s model of the world oil market found that the “no action” alternative would decrease global carbon dioxide emissions by up to 2.3 billion metric tons over the duration of the 2017–2022 OCS Leasing Program<sup>156</sup>: this is more than the annual CO<sub>2</sub> emissions from the entire U.S. transportation sector.<sup>157</sup> This finding makes sense as a matter of supply and demand: decreasing global oil supply should lead to higher global oil prices, and consequently less oil consumption and greenhouse gas emissions.<sup>158</sup> Thus, BOEM arguably did not complete its “net benefits” analysis for the 2017–2022 Program, from the perspective of both upstream and downstream greenhouse gas emissions.

In order to provide “fair market value,” federal leasing should provide net benefits to taxpayers. And ideally, leasing decisions should be calibrated to maximize net benefits. Through a programmatic EIS or separate planning process, Interior should explore how to account for the social and environmental costs of fossil fuel production through adjustments to federal lease fiscal terms, such as royalty rates. A royalty payment that targets the negative externalities not addressed by other policies (such as direct regulation limiting greenhouse gas emissions or an economy-wide carbon tax) would, in theory, allow the public to enjoy maximum net benefits from extraction by requiring private firms to

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costs associated with greenhouse gas (GHG) emissions related to oil and gas production, transport, processing and end use consumption.” *Id.* at 5–23.

155. *Id.* at 5–23. See also U.S. BUREAU OF OCEAN ENERGY MGMT., OCS OIL AND NATURAL GAS: POTENTIAL LIFECYCLE GREENHOUSE GAS EMISSIONS AND SOCIAL COST OF CARBON (2016), <https://perma.cc/2MXN-QXBV> [hereinafter BOEM, OCS LIFECYCLE GHG REPORT]. Section 6.4 of the Proposed Final Plan provides detail on possible OCS production substitutes. For example, oil imports would replace 63 percent of anticipated OCS production under a No Sale option; onshore production 22 percent; and reduced consumption only 7 percent. BOEM, 2017–2022 OCS PROPOSED FINAL LEASING PROGRAM, *supra* note 73, at 6–17.
156. BOEM, OCS LIFECYCLE GHG REPORT, *supra* note 155, at 23–24 (“[F]or the global oil market, MarketSim substitutions under the No Action Alternative show a reduction in foreign oil consumption of approximately 1, 4, and 6 billion barrels of oil for the low-, mid-, and high-price scenarios, respectively, over the duration of the 2017–2022 Program. GHG impacts for this reduction in oil consumption, as well as possible changes for natural gas, are not captured in this analysis.”); Peter Erickson, *Final Obama Administration Analysis Shows Expanding Oil Supply Increases CO<sub>2</sub>*, STOCKHOLM ENV’T INST. (Jan. 30, 2017), <https://perma.cc/4MX6-F7QD> (translating oil consumption projections from BOEM’s OCS Lifecycle Greenhouse Gas Emissions report into estimated carbon dioxide emissions).
157. One year of U.S. transportation sector CO<sub>2</sub> emissions is about 1.7 billion metric tons of CO<sub>2</sub>. EPA, INVENTORY OF U.S. GREENHOUSE GAS EMISSIONS AND SINKS: 1990–2014, at ES-11 (2016).
158. See Peter Erickson, *Obama’s Arctic Oil Ban Advances Key Climate Test*, SEATTLE TIMES (Dec. 30, 2016), <https://perma.cc/FP59-YD2L>.

internalize negative externalities and align their incentives with those of the government. These potential reforms are discussed in Part IV, *infra*.

*D. Economic Tools: The Social Cost of Carbon, Energy Substitution Analysis, and Option Value*

There are several economic tools at Interior's disposal in managing fossil fuel leasing for the benefit of the public. These tools include the Interagency Working Group's Social Cost of Carbon and the Social Cost of Methane.

The Social Cost of Carbon is a widely accepted methodology used by multiple federal agencies to quantify the costs of climate pollution for the purpose of designing federal rules and programs. The Social Cost of Carbon quantifies the economic damages associated with a small increase in carbon dioxide emissions, conventionally one metric ton, in a given year.<sup>159</sup> The Social Cost of Carbon was designed by an Interagency Working Group comprised of economic and scientific experts from the White House and multiple federal agencies.<sup>160</sup> It used the latest peer-reviewed science and economic models.<sup>161</sup> EPA's Social Cost of Methane builds on this framework and is also based on the latest peer-reviewed science and economic models.<sup>162</sup> While the Trump Administration disbanded the federal Interagency Working Group and withdrew its technical documents "as no longer representative of governmental policy,"<sup>163</sup> the Social Cost of Carbon and the Social Cost of Methane remain the best meth-

159. *The Social Cost of Carbon*, EPA, <https://perma.cc/3NS6-ABVE>.

160. *Id.*

161. In February 2010, the Interagency Working Group ("IWG") released estimated Social Cost of Carbon values, developed using the three most widely cited climate economic impact models known as integrated assessment models. *See* EPA, FACT SHEET: SOCIAL COST OF CARBON 2-3 (2016). These models were each developed by outside experts, and published and discussed in peer-reviewed literature. *See id.* at 3. An accompanying Technical Support Document released by the IWG discussed the models, their inputs, and the assumptions used in generating the Social Cost of Carbon estimates. *See* INTERAGENCY WORKING GRP. ON SOCIAL COST OF GREENHOUSE GASES, TECHNICAL SUPPORT DOCUMENT (2016), <https://perma.cc/A99J-YDZ4>. The Government Accountability Office examined the IWG's process, and found that it was consensus-based, relied on academic literature and modeling, disclosed relevant limitations, and was designed to incorporate new information via public comments and updated research. *See* U.S. GOV'T ACCOUNTABILITY OFFICE, GAO-14-663, REGULATORY IMPACT ANALYSIS: DEVELOPMENT OF SOCIAL COST OF CARBON ESTIMATES (2014), <https://perma.cc/BKE2-XDTY>.

162. *See generally* INTERAGENCY WORKING GRP. ON SOCIAL COST OF GREENHOUSE GASES, ADDENDUM TO TECHNICAL SUPPORT DOCUMENT ON SOCIAL COST OF CARBON FOR REGULATORY IMPACT ANALYSIS UNDER EXECUTIVE ORDER 12866 (2016), <https://perma.cc/ZML3-N8J3> (describing the Social Cost of Methane); *see also* Alex L. Marten et al., *Incremental CH<sub>4</sub> and N<sub>2</sub>O Mitigation Benefits Consistent with the US Government's SC-CO<sub>2</sub> Estimates*, 15 CLIMATE POL'Y 272, 279-90 (2015) (describing methodology for calculating the Social Cost of Methane).

163. Exec. Order No. 13783, 82 Fed. Reg. 16,093, 16,095 (Mar. 31, 2017).

ods available to analyze the social cost of greenhouse gas emissions.<sup>164</sup> In the absence of any better metric, Interior should continue to use these economic tools when preparing EISs, conducting net benefits analysis, and making policy decisions that rest, at least in part, on the social cost of greenhouse gas emissions.

Another tool in Interior's planning arsenal is energy substitution analysis. This method would enable the agency to model alternative leasing scenarios and potential changes to its programs, such as adjustments to fiscal terms. In its NEPA analysis, Interior should analyze the effect of each alternative, including the "no action" alternative, on energy markets and greenhouse gas emissions, including upstream and downstream emissions. In line with recent case law, federal agencies must disclose the upstream and downstream greenhouse gas emission effects of actions that require NEPA review.<sup>165</sup> Further, a growing number of federal courts have held that agencies must conduct proper energy substitution analysis in NEPA reviews.<sup>166</sup>

Economists measure how coal, natural gas, and other fuels act as substitutes in the electricity market by analyzing "cross-price elasticity," that is, how responsive producers are in swapping inputs when relative prices change.<sup>167</sup> Conducting proper substitution analysis in a leasing plan or EIS is critical to analyzing potential environmental impacts, and ultimately, to selecting the most efficient alternative. For example, increasing the federal royalty rate for

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164. Richard L. Revesz et al., *Best Cost Estimate of Greenhouse Gases*, 357 SCI. 655, 655 (2017) (explaining that, even after the Trump Administration's Executive Order disbanding the Interagency Working Group on the Social Cost of Carbon, the social cost of greenhouse gas estimate of around \$50 per ton of carbon dioxide is still the best estimate).

165. *See* *Sierra Club v. FERC*, No. 16-1329 (D.C. Cir. Aug. 22, 2017) (finding FERC's NEPA analysis deficient because the agency "should have estimated the amount of power-plant carbon emissions that the pipelines will make possible."); Michael Burger & Jessica Wentz, *Downstream and Upstream Greenhouse Gas Emissions*, 41 HARV. ENVTL. L. REV. 109, 147 (2017) ("Since 2014, there have been five district court decisions regarding the scope of downstream emissions that must be evaluated in NEPA reviews for coal lease modifications and other approvals involving the extraction of coal from federal lands. In four of these cases, district courts in Colorado and Montana determined that the responsible agencies failed to take the requisite 'hard look' at downstream emissions from the combustion of the coal."); *see also* 42 U.S.C. § 4332(2)(C) (2012) (requiring the preparation, as part of every "major Federal action[ ] significantly affecting the quality of the human environment," of a "detailed statement" discussing and disclosing the environmental impact of the action).

166. *See, e.g., WildEarth Guardians v. U.S. Bureau of Land Mgmt.*, No. 15-8109 (10th Cir. Sep. 15, 2017); *Mid States Coal. for Progress v. Surface Transp. Bd.*, 345 F.3d 520, 549-50 (8th Cir. 2003); *High Country Conservation Advocates v. Forest Serv.*, 52 F.Supp.3d 1174, 1197 (D. Colo. 2014).

167. *See* MANKIW, *supra* note 12, at 98. For example, the U.S. Energy Information Administration found that for the U.S. market, a 10 percent increase in the ratio of the price of coal to the price of natural gas leads to a 1.4 percent increase in the use of natural gas over coal. U.S. ENERGY INFO. ADMIN., *FUEL COMPETITION IN POWER GENERATION AND ELASTICITIES OF SUBSTITUTION 1* (2012).

coal would be expected to lead to some substitution of natural gas and renewable energy for coal (as well as some substitution of coal produced on public lands to coal produced on private lands) in the overall energy mix, as well as greater energy conservation. This, in turn, should reduce total greenhouse gas emissions. Interior can choose from several sophisticated models in order to conduct substitution analysis and evaluate the effect of different leasing policies and royalty rates on the energy market. These models include ICF International's Integrated Planning Model ("IPM"),<sup>168</sup> the U.S. Energy Information Administration's National Energy Modeling System ("NEMS");<sup>169</sup> and BOEM's MarketSim model, which it uses to analyze lease sale scenarios in its five-year planning process.<sup>170</sup> Each of these models has benefits and drawbacks; generally, there is a tradeoff between model transparency and model complexity.<sup>171</sup>

Interior has been inconsistent in conducting substitution analysis in some of its prior EISs and leasing plans. For example, in its 2010 EIS for the Wright Area coal leases, located in the Powder River Basin, BLM reasoned that if it were to select the "no action" alternative (not leasing the coal), other coal mines would increase production to entirely replace all 2 billion tons of coal anticipated from the leases.<sup>172</sup> As a result, it predicted that the amount of coal burned in the United States—and the resulting carbon dioxide and methane emissions—would be identical whether or not the leases were approved.<sup>173</sup> BLM's "perfect substitution" assumption was questionable in light of the economic principles of supply and demand, as well as the empirical state of knowledge concerning the U.S. coal market. In September 2017, the 10th Circuit Court of Appeals found BLM's "perfect substitution" assumption to be arbitrary and capricious, as it lacked support in the record and was contrary to basic economic

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168. *Integrated Planning Model*, ICF INTERNATIONAL, INC., <https://perma.cc/8W39-86Z2>.

169. See U.S. ENERGY INFO. ADMIN., ANNUAL ENERGY OUTLOOK 2014 APP. E (2014), <https://perma.cc/4F4H-UVSW>.

170. See generally BUREAU OF OCEAN ENERGY MGMT., CONSUMER SURPLUS ENERGY SUBSTITUTES FOR OCS OIL AND GAS PRODUCTION: THE 2015 MARKET SIMULATION MODEL (MARKETSIM) (2015), <https://perma.cc/BSH3-UVAM> (providing a comprehensive description of the model).

171. For more information on the benefits and drawbacks of these three models for Interior's EISs and other analyses, see PETER H. HOWARD, INST. FOR POLICY INTEGRITY, N.Y. UNIV. SCH. OF LAW, THE BUREAU OF LAND MANAGEMENT'S MODELING CHOICE FOR THE FEDERAL COAL PROGRAMMATIC REVIEW (2016), <https://perma.cc/59LU-LVUV>.

172. U.S. BUREAU OF LAND MGMT., FINAL ENVIRONMENTAL IMPACT STATEMENT FOR THE WRIGHT AREA COAL LEASE APPLICATIONS, VOL. 1, 4-141 (2010) [hereinafter WRIGHT AREA EIS] ("It is not likely that selection of the No Action alternatives would result in a decrease of U.S. CO<sub>2</sub> emissions attributable to coal mining and coal-burning power plants in the longer term, because there are multiple other sources of coal that, while not having the cost, environmental, or safety advantages, could supply the demand for coal . . .").

173. *Id.*

principles.<sup>174</sup> Other federal agencies, however, including the Surface Transportation Board and the State Department, have properly analyzed the effects of their energy management decisions in NEPA reviews, and have had those decisions upheld by federal courts.<sup>175</sup>

Finally, Interior should use available techniques to estimate option value, or the informational value of delaying irreversible decisions, such as when and on what terms to sell non-renewable resources to private companies. Interior holds—on behalf of the American public—perpetual options to develop or lease oil, gas, and coal tracts; it must decide when and where exercising those options will be most opportune.<sup>176</sup> When the federal government sells a private lessee the right to develop a tract, it extinguishes the perpetual option that the government holds on behalf of the American people, and sells a time-limited option, valid for the duration of the lease term. Interior does not account for the lost value of its perpetual option in the price of its leases. This failure to account for option value in minimum bids and internal fair market value calculations systematically undervalues public resources and contributes to leasing too much coal, oil, and gas too early, and at too low of a price.<sup>177</sup> Indeed, energy

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174. *WildEarth Guardians v. U.S. Bureau of Land Mgmt.*, No. 15-8109, slip op. at 23–24 (10th Cir. filed Sept. 15, 2017), <https://perma.cc/DHS7-57P7>. “The leases at issue would produce up to 230 million tons of coal per year—more than 20 percent of the total U.S. coal used for electricity in 2010 . . . . In the ‘no action’ alternative, removing over 20 percent of total U.S. production would be a non-marginal change that would affect coal prices, demand, and greenhouse gas emissions.” Brief for Institute for Policy Integrity at N.Y. Univ. Sch. of Law as Amicus Curiae Supporting Petitioners–Appellants, *WildEarth Guardians v. U.S. Bureau of Land Mgmt.*, No. 15-8109, 2011 WL 905656 (10th Cir., Feb. 5, 2016), <https://perma.cc/V9WU-3NZB> [hereinafter Policy Integrity 10th Circuit Amicus Brief].

175. The U.S. Court of Appeals for the Eighth Circuit criticized the Surface Transportation Board for “illogical[ly]” concluding that approving new railroad lines to Powder River Basin coal mines would not affect the demand for and consumption of coal, and for ignoring “widely used” models capable of forecasting such effects. *Mid States Coal. for Progress v. Surface Transp. Bd.*, 345 F.3d 520, 549–50 (8th Cir. 2003). “On remand, the Board undertook such a study using the Energy Information Administration’s (EIA) National Energy Modeling System (NEMS) . . . [which] not only forecasts coal supply and demand but also quantifies environmental impacts.” *Mayo Found. v. Surface Transp. Bd.*, 472 F.3d 545, 555 (8th Cir. 2006). The U.S. District Court of Colorado “[could] not make sense” of the Forest Service’s assumption that approving road construction through national forests to reach Colorado coal mines would not increase coal production and consumption. *High Country Conservation Advocates v. U.S. Forest Serv.*, 52 F. Supp. 3d 1174, 1197 (D. Colo. 2014). Finally, when the State Department concluded that a pipeline approval would not affect energy substitutes, the agency first analyzed the market and “conclude[d] that this amount of crude oil [3% of total U.S. processing] is not expected . . . to significantly impact end-use price or demand.” *Sierra Club v. Clinton*, 746 F. Supp. 2d 1025, 1046 (D. Minn. 2010). The U.S. District Court of Minnesota found the analysis to be sufficient under NEPA. *Id.*

176. See Michael A. Livermore, *Patience is an Economic Virtue: Real Options, Natural Resources, and Offshore Oil*, 84 U. COLO. L. REV. 581, 636–37 (2013).

177. See *id.* at 636–38.

companies routinely account for option value with respect to resource prices, which explains their longstanding practice of stockpiling leases, yet waiting years to begin production.<sup>178</sup>

While private companies have an incentive to account for some price uncertainty in their lease purchase decisions—and therefore, the government would receive some compensation for price uncertainty through lease bids if it held truly competitive auctions—Interior does not address the full spectrum of uncertainty that is relevant from a public perspective. Specifically, Interior’s planning processes, minimum bids, and internal “fair market value” assessments omit environmental and social cost uncertainty. The environmental, social, and economic uncertainties associated with natural resources extraction are many, and include:

- resource prices, which are impacted by global energy markets, among other factors;
- the magnitude of risk from externalities, such as carbon dioxide, methane, and particulate matter emissions;<sup>179</sup>
- the development of pollution prevention or capture technologies;
- competing uses of federally-owned lands, such as the potential and need for more renewable energy production; and
- coal, oil, and natural gas reserve estimates, which may affect the long-term availability and price of resources.

BOEM recognized the utility of option value in its offshore leasing plan for 2017 to 2022. Specifically, BOEM noted that: (i) environmental and social cost uncertainties can affect the size, timing, and location of offshore leasing; (ii) option value can be a component of the “fair market value” of a lease; and (iii) BOEM can raise minimum bids, rents, and royalties for leases to account for option value.<sup>180</sup> Nevertheless, BOEM stopped short of quantifying the option value associated with offshore leasing. However, the agency’s qualitative assessment of option value and its acknowledgement that option value is a component of fair market value is an important policy shift that should be extended to all federal leasing. These uncertainties should be accounted for when evaluating which parcels to offer for lease, and in determining fair market value for tracts. BLM, unlike BOEM, fails to address environmental and social option value in any manner, either qualitatively or quantitatively.

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178. *See id.* at 642.

179. For example, methane leaks from natural gas gathering facilities were found to be 8 times higher than prior EPA estimates. *See* John Schwartz, *Methane Leaks in Natural-Gas Supply Chain Far Exceed Estimates, Study Says*, N.Y. TIMES (Aug. 18, 2015), <https://perma.cc/7K6Y-G82C>.

180. U.S. BUREAU OF OCEAN & ENERGY MGMT., 2017–2022 OUTER CONTINENTAL SHELF OIL AND GAS LEASING DRAFT PROPOSED PROGRAM at 5-20, 8-3–8-19 (2015), <https://perma.cc/8AU3-7MS4>.

These economic methods, together with increasing scientific and technical understanding of the externality costs of fossil fuel production, enable Interior to account for costs that have historically been omitted from its decision-making. While BOEM has employed more of these planning and economic methods in its offshore leasing plans than BLM has for onshore leasing, both agencies should instill more rationality into the leasing process in order to maximize social welfare.

### III. INTERIOR'S STATUTORY MANDATES ARE CONSISTENT WITH MAXIMIZING SOCIAL WELFARE

Congress has instructed Interior to earn “fair market value” for the use and development of federal resources and to harmonize production with environmental preservation.<sup>181</sup> Interior's capacious statutory mandates, which provide minimal direction on how to carry out a national energy leasing program, may have contributed to the agency maintaining its historical, uncompetitive leasing practices.<sup>182</sup> But, as this Part explains, Interior has broad discretion to interpret its statutory mandates to move towards maximizing social welfare. This interpretation, grounded in sound economic principles, can help drive structural and methodological reforms to update and improve the federal leasing system. The social welfare-maximization framework is also consistent with legislative history, judicial precedent, and thirty years' worth of presidential directives instructing agencies to use their discretion to maximize the net benefits of their policy choices.

#### A. *Interpreting Interior's Statutory Mandate*

Four primary statutes set forth Interior's duties with respect to natural resources production on federal lands: for onshore leasing, FLPMA,<sup>183</sup> the Min-

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181. See 43 U.S.C. § 1344(a)(4) (2012); see also 43 U.S.C. § 1701(a)(8)–(9) (2012).

182. Other factors may have also contributed to this problem, including the advantages of incumbent resource developers over potential new entrants to the market, information asymmetry between incumbent resource producers and the federal government, and potential regulatory agency “capture,” or the ability of narrow interest groups to influence regulators and secure favorable terms or concessions like royalty rate reductions. See, e.g., Huber, *supra* note 16 (discussing the advantages of incumbent resource developers). These other impediments to a more efficient federal leasing program are worthy of additional analysis, yet beyond the scope of this article.

183. 43 U.S.C. §§ 1701–1787 (2012).

eral Leasing Act,<sup>184</sup> and the Federal Coal Leasing Amendments Act of 1976;<sup>185</sup> and for offshore leasing, OCSLA.<sup>186</sup>

Enacted in 1976, FLPMA provides that federal lands are to be used only for the advancement of the national interest.<sup>187</sup> The Act declares that:

[P]ublic lands be managed in a manner that will protect the quality of scientific, scenic, historical, ecological, environmental, air and atmospheric, water resource, and archeological values; that, where appropriate, will preserve and protect certain public lands in their natural condition; that will provide food and habitat for fish and wildlife and domestic animals; and that will provide for outdoor recreation and human occupancy and use.<sup>188</sup>

The Act sets forth Interior's dual mandate of development and preservation. Agencies must both protect the environment<sup>189</sup> and manage federal lands in such a way as to provide for domestic sources of "minerals [including hydrocarbon energy resources], food, timber, and fiber."<sup>190</sup>

FLPMA requires agencies to develop land use plans, and to manage public lands in accordance with the "principles of multiple use and sustained yield."<sup>191</sup> The Act defines "multiple use" as:

[T]he management of the public lands and their various resource values so that they are utilized in the combination that will best meet the present and future needs of the American people; . . . the *use of some land for less than all of the resources*; a combination of balanced and diverse resource uses that takes into account the *long-term needs of future generations* for renewable and nonrenewable resources, including, but not limited to, recreation, range, timber, minerals, watershed, wildlife and fish, and natural scenic, scientific and historical values.<sup>192</sup>

"Multiple use" also refers to the "harmonious and coordinated management of the various resources without permanent impairment of the productivity of the land and the quality of the environment with consideration being given to the relative values of the resources and not necessarily to the combination of uses

184. 30 U.S.C. §§ 181–287 (2012).

185. Federal Coal Leasing Amendments Act of 1976, Pub. L. No. 94-377, 90 Stat. 1083 (amending Mineral Leasing Act of 1920, 30 U.S.C. §§ 181–287).

186. 43 U.S.C. §§ 1331–1356b (2012).

187. *Id.* § 1701(a)(1).

188. *Id.* § 1701(a)(8).

189. *Id.*

190. *Id.* § 1701(a)(12).

191. *Id.* § 1712(a)–(c)(1).

192. *Id.* § 1702(c) (emphasis added).

that will give the greatest economic return or the greatest unit output.”<sup>193</sup> The terms “harmonious” and “coordinated” imply rational, reasoned decision-making. Further, the call to manage federal lands and leasing to avoid “permanent impairment of the productivity of the land and the quality of the environment” requires Interior to act in accordance with sound scientific and economic information in managing federal lands and their resources.<sup>194</sup> Indeed, this charge would appear to permit Interior to pause or restrict fossil fuel leasing, if, for example, the agency determined that the climate impacts or other environmental harms of leasing outweighed the benefits.

FLPMA defines “sustained yield” as “the achievement and maintenance in perpetuity of a high-level annual or regular periodic output of the various *renewable* resources of the public lands consistent with multiple use.”<sup>195</sup> Importantly, this definition emphasizes maintaining the output of renewable resources, but makes no mention of non-renewable resources, such as fossil fuels. In line with its attention to environmental values, the Act also tasks Interior with “tak[ing] any action necessary to prevent unnecessary or undue degradation of the lands.”<sup>196</sup> This broad call appears to permit Interior to create incentives for producers to reduce environmental impacts, including externalities like air and water pollution.

The Mineral Leasing Act of 1920 declares that it is the policy of the federal government and in the national interest to foster and encourage private enterprise in “orderly and economic development of domestic mineral resources.”<sup>197</sup> The term “orderly,” itself, conveys a Congressional desire for careful, rational management of America’s energy resources. The term “economic” is consistent with a cost-benefit analysis framework. Among many provisions dedicated to mineral leasing, the Act also provides that the Secretary of the Interior can issue regulations requiring that operators prevent “undue waste.”<sup>198</sup>

Specific to coal resources, the Federal Coal Leasing Amendments Act of 1976 provides that the Secretary of the Interior is authorized to “divide any lands subject to this chapter which have been classified for coal leasing into leasing tracts of such size as he finds appropriate and *in the public interest*.”<sup>199</sup> Congress was unequivocal in tasking Interior with managing federal coal resources in order to benefit the public. Read together, this statutory framework is highly consistent with Interior accounting for the environmental and social costs of fossil fuel leasing, as well as its economic benefits. Indeed, Interior

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193. *Id.*

194. *See id.* § 1701(a)(8).

195. *Id.* § 1702(h) (emphasis added).

196. 43 U.S.C. § 1732(b) (2012).

197. 30 U.S.C. § 21a (2012).

198. *Id.* § 187.

199. *Id.* § 201 (emphasis added).

already does this, in part, when deciding where and when to lease offshore resources through its net social value analysis.<sup>200</sup>

With respect to offshore resources, the congressional statement of policy in OCSLA declares that the Outer Continental Shelf is a vital natural resource held in trust by the federal government for the benefit of the American people.<sup>201</sup> It details Interior's dual mandate to conduct expeditious and orderly leasing while also protecting the environment and other uses of our nation's waters.<sup>202</sup>

Section 18 of OCSLA requires that management of the Outer Continental Shelf be "conducted in a manner which considers economic, social, and environmental values of the renewable and nonrenewable resources contained in the outer Continental Shelf, and the potential impact of oil and gas exploration on other resource values of the outer Continental Shelf and the marine, coastal, and human environments."<sup>203</sup> Congress further directed the Secretary of the Interior to "select the timing and location of leasing, to the maximum extent practicable, so as to obtain a *proper balance between the potential for environmental damage, the potential for the discovery of oil and gas, and the potential for adverse impact on the coastal zone.*"<sup>204</sup> One reasonable way to interpret the call to "obtain a proper balance" is to manage the program in order to maximize social welfare. OCSLA, much like FLPMA, emphasizes rational management in phrases such as "expeditious and orderly development . . . subject to environmental safeguards."<sup>205</sup> And as described in Section III.C, *infra*, courts have upheld Interior's use of cost-benefit analysis to effectuate a "proper balance" between offshore development and environmental protection.

In addition to striking a proper balance between production and preservation, Interior is required to earn "fair market value" for the United States for the use of onshore and offshore public lands and resources. FLPMA requires that the United States "receive fair market value of the use of the public lands and their resources unless otherwise provided for by statute."<sup>206</sup> The Federal Coal Leasing Amendments Act of 1976 likewise specifies that no bid may be accepted which is less than "the fair market value, as determined by the Secretary, of the coal subject to the lease."<sup>207</sup> Interior has discretion to carry out this "fair market value" mandate in a manner that will maximize social welfare.

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200. See BOEM, 2017–2022 OCS PROPOSED FINAL LEASING PROGRAM, *supra* note 73, at 5–11–5–13 (describing BOEM's methods of analysis).

201. 43 U.S.C. § 1332(3) (2012).

202. *Id.* § 1332(2)–(3).

203. *Id.* § 1344(a)(1).

204. *Id.* § 1344(a)(3) (emphasis added).

205. *Id.* § 1332(3).

206. *Id.* § 1701(a)(9).

207. 30 U.S.C. § 201(a)(1) (2012).

The term “fair market value” is not defined in FLPMA or Interior’s other governing statutes. Interior last convened a working group to comprehensively review its “fair market value” procedures in 1982. The task force determined that “fair market value” was not merely the value of the resource discovered or produced, but the “value of ‘the right’ to explore and, if there is a discovery, to develop and produce the energy resource.”<sup>208</sup> Indeed, the statute refers to the value of using the lands, and not solely to the value of the resources.

The Mineral Leasing Act requires that all coal be sold at “fair market value.”<sup>209</sup> It also states that the Secretary of the Interior can include coal, oil, or gas lease terms that she or he deems necessary “to insure the sale of the production of such leased lands to the United States and to the public at reasonable prices, for the protection of the interests of the United States, for the prevention of monopoly, and for the safeguarding of the public welfare.”<sup>210</sup> Protecting the interests of the United States and preventing monopoly are highly consistent with a social welfare maximizing framework.

With respect to offshore resources, OCSLA requires that “[l]easing activities . . . be conducted to assure receipt of fair market value for the lands leased and the rights conveyed by the Federal Government.”<sup>211</sup> While the Act does not provide a definition of “fair market value,” it does refer to the value of the lands and the rights pertaining thereto, rather than simply the resources to be extracted. BOEM’s regulation and enforcement manual describes its fair market value process and bid adequacy procedures as intending to “ensure that the public receives a fair return for OCS oil and gas leases.”<sup>212</sup> Fair market value is defined in BOEM’s manual identically to the description in BLM’s handbook: “the amount in cash, or on terms reasonably equivalent to cash, for which, in all probability, the property would be sold by a knowledgeable owner willing but not obligated to sell to a knowledgeable purchaser who desired but is not obligated to buy.”<sup>213</sup>

A knowledgeable owner would be expected to care about the externalities affecting them directly, such as potential air, water, and noise pollution from leasing their land for fossil fuel production. However, as explained in Part II, *supra*, Interior is not a private actor, but a social decisionmaker. As such, it has an incentive to reduce a broader array of externalities. Indeed, Interior is tasked

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208. U.S. GOV’T ACCOUNTABILITY OFFICE, GAO-08-691, OIL AND GAS ROYALTIES: THE FEDERAL SYSTEM FOR COLLECTING OIL AND GAS REVENUES NEEDS COMPREHENSIVE REASSESSMENT 3 (2008), <https://perma.cc/65AG-DZKJ>.

209. 30 U.S.C. § 201(a)(1) (“No bid shall be accepted which is less than the fair market value, as determined by the Secretary, of the coal subject to the lease.”).

210. 30 U.S.C. § 187 (2012).

211. 43 U.S.C. § 1344(a)(4) (2012).

212. U.S. BUREAU OF OCEAN ENERGY MGMT., REGULATION AND ENFORCEMENT MANUAL, 610.1: FAIR MARKET VALUE 1 (2010).

213. *Id.*

with managing a federal program to avoid “permanent impairment of . . . the quality of the environment,”<sup>214</sup> and to set fiscal terms for leases in order to “safeguard[ ] . . . the public welfare.”<sup>215</sup>

In short, Interior has discretion to carry out its capacious statutory mandates in a manner that seeks to maximize social welfare. As the next sections show, this interpretation is supported by legislative history, relevant case law, and decades of agency guidance.

### B. Legislative History

The legislative history of Interior’s governing statutes supports the argument that Interior can use cost-benefit analysis to help guide its leasing decisions, and specifically, that Interior could justify a royalty rate increase on the basis of environmental and social externality costs. Indeed, the revenue share provision of FLPMA provides that the state share of revenue from federal leases “shall be . . . used by such State . . . giving priority to those subdivisions of the State *socially or economically impacted by development of minerals leased under this Act*, for (i) planning, (ii) construction and maintenance of public facilities, and (iii) provision of public service . . . .”<sup>216</sup> Thus, the Act directly links receipt of production revenues to compensation for the social and environmental costs of mineral production. In addition, environmental and social externalities have been consistently cited as a rationale for potential royalty rate increases and for royalty share agreements between states and the federal government in legislative history leading up to the passage of Interior’s governing statutes, as well as other proposed legislation.<sup>217</sup>

Congressional testimony leading up to the passage of FLPMA reveals support for revenue sharing provisions that would direct a portion of the revenue from fossil fuel production to the states where the production occurs in order to “help county government[s] cope with energy development impact problems.”<sup>218</sup> Another congressional witness bemoaned that, absent the passage of the Act, “[t]he public receives no compensation for the mineral values extracted from public lands, and the miner also escapes the social and environmental costs of his activities.”<sup>219</sup>

214. 43 U.S.C. § 1702 (2012).

215. 30 U.S.C. § 187 (2012).

216. *Id.* § 191 (emphasis added).

217. For more detailed discussion on the legislative history concerning federal royalty rates, as well as their economic rationales, see Hein & Cecot, *Mineral Royalties*, *supra* note 137.

218. *Bills to Provide for the Mgmt., Prot., and Dev. of the Nat’l Res. Lands, and for Other Purposes: Hearings on S.1507 and S.1292 Before the Subcomm. on Env’t & Land Res. of the S. Comm. on Interior & Insular Affairs*, 94th Cong. 244 (1975) (statement of James Evans, Legis. Rep., Nat’l Ass’n of Cty.s., Washington, D.C.).

219. *Id.* at 113 (statement of John A. McComb, Sw. Rep. of the Sierra Club).

Similarly, the legislative history of the Federal Coal Leasing Amendments Act of 1976 reflects a concern that states be paid a greater share of federal coal royalties to account for social and environmental externalities: “When an area is newly opened to large scale mining, local governmental entities must assume the responsibility of providing public services needed for new communities, including schools, roads, hospitals, sewers, police protection, and other public facilities, as well as adequate local planning for the development of the community.”<sup>220</sup> The legislative history also reflects concern as to “the waste of valuable resources, and the creation of severe environmental impacts.”<sup>221</sup>

Moreover, coastal states and their congressional representatives have repeatedly advocated for a greater portion of revenue from federal offshore oil and gas production due to significant impacts on coastal infrastructure and the environment.<sup>222</sup> In direct recognition of this link, the Gulf of Mexico Energy Security Act of 2006 directs coastal states to use their share of royalty payments from offshore drilling for “the purposes of coastal protection, including conservation, coastal restoration, hurricane protection, and infrastructure directly affected by coastal wetland losses,” and “[m]itigation of damage to fish, wildlife, or natural resources,” among other delineated uses.<sup>223</sup> And the federal Land and Water Conservation Fund, established by Congress in 1964, uses offshore federal oil and gas revenues to build and maintain public parks and protect open space and trails across the country.<sup>224</sup>

In short, the text and legislative history of Interior’s governing statutes make explicit the relationship between Interior’s royalty assessments and public compensation for foreseeable environmental, social, and economic impacts. In-

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220. H.R. REP. NO. 94-681, at 38 (1975), *as reprinted in* 1976 U.S.C.C.A.N. 1943, 1975 WL 12515 (Leg. Hist.).

221. *Id.* at 20.

222. See CONG. RESEARCH SERV., NO. R40645, U. S. OFFSHORE OIL AND GAS RESOURCES: PROSPECTS AND PROCESSES 19 (Apr. 26, 2010), <https://perma.cc/JT7N-CMZB>; *see also The Fair Act of 2013: Hearing on S.1273 Before the S. Comm. on Energy & Nat. Res.*, 113th Cong. (2013), <https://perma.cc/EQ3S-7Z2U> (stating, *inter alia*, “Revenue sharing is vital for these [coastal] areas to adequately respond to all sorts of impacts associated with enormous influxes of people and equipment”; “[t]here are also cumulative impacts of offshore energy development such as habitat degradation and coastal erosion that are typically not mitigated at the project level, and it is important for states to address these impacts. Therefore, a significant portion of a state’s revenue share should be directed to addressing those unmitigated cumulative impacts, including through coastal protection and restoration and investments in natural infrastructure . . .”).

223. See 30 C.F.R. § 219.410(a)(1)–(2) (2016).

224. *Land and Water Conservation Fund*, U.S. NAT’L PARK SERV., <https://perma.cc/Q75H-4JC3> (“The Land and Water Conservation Fund was established by Congress in 1964 to fulfill a bipartisan commitment to safeguard our natural areas, water resources and cultural heritage, and to provide recreation opportunities to all Americans. Using zero taxpayer dollars, the fund invests earnings from offshore oil and gas leasing to help strengthen communities, preserve our history and protect our national endowment of lands and waters.”).

terior would be acting in line with historical precedent by adjusting royalty rates to recoup some of the known social and environmental costs of fossil fuel production.

### C. Judicial Review

Case law also supports the argument that Interior can use cost-benefit analysis to help guide its leasing decisions. Courts influence federal natural resources planning and development through their interpretation of broadly worded federal legislation and through their institutional responsibility to scrutinize the decisions of federal agencies.<sup>225</sup> Courts are generally deferential to Interior's factual decisions and policy judgments that have a rational basis, especially where a decision involves highly technical or scientific issues for which the agency has particular expertise. Courts have been more willing to scrutinize Interior's decisions where it has failed to consider an enumerated statutory factor, or to provide a rational explanation for its conclusions. This Part analyzes relevant case law that illustrates how a future court might review Interior's actions moving towards maximizing social welfare in fossil fuel leasing.

Under the landmark case *Chevron v. Natural Resources Defense Council*, courts give deference to an agency's interpretation of ambiguous statutory language.<sup>226</sup> If Interior interprets "fair market value" to allow cost-benefit analysis, it would likely be entitled to *Chevron* deference.<sup>227</sup> This would be true even if its interpretation reflected a departure from prior interpretations, as long as the agency provided a reasonable explanation for the change.<sup>228</sup> As the Supreme Court stated in *Chevron*, "[a]n initial agency interpretation is not instantly carved in stone. On the contrary, the agency, to engage in informed rulemaking, must consider varying interpretations and the wisdom of its policy on a continuing basis."<sup>229</sup> In recent years, courts, including the Supreme Court, have shown more willingness to scrutinize agency interpretations of broad statutory

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225. Edward A. Fitzgerald, *California v. Watt: Congressional Intent Bows to Judicial Restraint*, 11 HARV. ENVTL. L. REV. 147, 148 (1987).

226. *See Chevron v. Nat. Res. Def. Council*, 467 U.S. 837, 843 (1984) (stating, "if the statute is silent or ambiguous with respect to the specific issue, the question for the court is whether the agency's answer is based on a permissible construction of the statute.").

227. *See id.*

228. *Id.* at 863–64; *see also* *FCC v. Fox Television Stations, Inc.*, 556 U.S. 502, 514–15 (2009) (holding that "agency action is not subject to heightened . . . review simply because it represents a change in administrative policy," and "not every agency action representing a change in policy need be justified by reasons more substantial than those required to adopt a policy in the first instance . . ."). *But see* *Encino Motorcars, LLC v. Navarro*, 136 S. Ct. 2117, 2126 (2016) (holding that the Department of Labor "gave almost no reasons at all" for a new regulation issued under the Fair Labor Standards Act and therefore *Chevron* deference was not applicable).

229. *Chevron*, 467 U.S. at 863–64.

mandates, especially where those interpretations have great “economic and political significance,” either by denying *Chevron* deference to an agency or by refusing to apply the *Chevron* framework altogether.<sup>230</sup> These cases may “portend more trouble ahead for administrative interpretations,” and arguably limit the dynamism of executive branch agencies tasked with carrying-out capacious statutory mandates.<sup>231</sup> Yet, as the following cases illustrate, the weight of judicial precedent affording Interior discretion to use cost-benefit analysis in order to carry out its broad statutory mandates should tip the scale towards upholding the interpretation grounded in balanced cost-benefit analysis espoused here.

In *California v. Watt* (“*Watt I*”), the United States Court of Appeals for the D.C. Circuit (“D.C. Circuit”) heard a challenge to Interior’s five-year leasing program.<sup>232</sup> Petitioners’ claims centered on assertions that the Secretary of the Interior had failed to comply with OCSLA section 18, which governs offshore oil and gas leasing.<sup>233</sup> In reviewing the Secretary’s findings of fact, the court used a substantial evidence test.<sup>234</sup> The court subjected the Secretary of the Interior’s policy judgments to “searching scrutiny to ensure that they are neither arbitrary nor irrational . . . .”<sup>235</sup> The court addressed the balancing factors listed in section 18(a)(2), and concluded that when creating a leasing program, the Secretary must consider all of the enumerated factors based on the existing information available.<sup>236</sup> While the court remanded the program back to the agency, it endorsed Interior’s interpretation that OCSLA section 18(a)(3)’s requirement to strike a “proper balance” among competing uses of the Outer Continental Shelf could be achieved through cost-benefit analysis.<sup>237</sup> The court thus deferred to Interior’s interpretation that it could effectuate a broad statutory mandate through quantitative analysis and rational decision-making.

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230. *Util. Air Regulatory Grp. v. EPA*, 134 S. Ct. 2427, 2442–44 (2014) (quoting *FDA v. Brown & Williamson Tobacco Corp.*, 529 U.S. 120, 160 (2000)) (declining to defer to EPA’s interpretation of a statute it is charged with administering and stating, “[w]e expect Congress to speak clearly if it wishes to assign to an agency decisions of vast ‘economic and political significance’”); *King v. Burwell*, 135 S. Ct. 2480, 2487–89 (2015) (declining to apply the *Chevron* framework in considering whether federal subsidies could be available for health insurance purchased on the federal exchange, despite ruling consistently with the government’s view).

231. See Lisa Heinzerling, *The Power Canons*, 58 WILLIAM & MARY L. REV. 1933, 1943 (2017) (“More fundamentally, these cases [*Utility Air Regulatory Group v. EPA*, *King v. Burwell*, and *Michigan v. EPA*] create a new trio of clear-statement principles, the result of which is to lodge interpretive power with the courts when the underlying statutory framework is too ambitious for the Court’s comfort.”).

232. *California v. Watt (Watt I)*, 668 F.2d 1290, 1294 (D.C. Cir. 1981).

233. See 43 U.S.C. § 1344 (2012).

234. *Watt I*, 668 F.2d at 1302.

235. *Id.* at 1317 (internal citations omitted).

236. *Id.* at 1305–13.

237. *Id.* at 1317–18.

In *California v. Watt* (“*Watt II*”), the D.C. Circuit upheld Interior’s revised offshore leasing Program.<sup>238</sup> Among other claims, petitioners asserted that the large size of Interior’s lease offerings and accelerated rate of leasing would drive the price of leases down, violating OCSLA section 18(a)(4)’s requirement that the program assure receipt of “fair market value.”<sup>239</sup> The court noted that the challenges concerned factual findings and policy judgments—“matters on which the Secretary is entitled to greater deference.”<sup>240</sup> The court held that the “fair market value” requirement “does not mandate the maximization of revenue, it only requires receipt of a fair return,” and held that Interior acted reasonably in determining that the “government’s prior use of its monopoly power may have produced prices in excess of fair market value and thus [was] not socially optimal.”<sup>241</sup> The court, therefore, deferred to Interior’s policy judgment to carry out the “fair market value” requirement in a way that would be most socially optimal, even if it did not maximize revenue. The court reserved its authority to set aside decisions based on “obviously incorrect results or methodology,” but found Interior’s analysis and methodology to be adequate.<sup>242</sup>

In *Natural Resources Defense Council v. Hodel*,<sup>243</sup> the D.C. Circuit applied a deferential standard of review in case challenging Interior’s practice of tailoring minimum bids to specific leases as opposed to using a single minimum bid. It did so because, “in essence, petitioners are attacking the Secretary’s policy judgment that a leasing program containing this discretionary feature will (in tandem with the bidding process and evaluation procedures) assure receipt of fair market value.”<sup>244</sup> In articulating the standard of review, the court noted that Interior’s factual determinations must be based upon substantial evidence, that its policy judgments must be based upon rational consideration of identified, relevant factors, and that its construction of the statute must be reasonable, in line with the Supreme Court’s holding in *Chevron*.<sup>245</sup> The Court held that Interior’s action of tailoring minimum bids to specific leases was permissible, stating: “the Secretary must nonetheless use his judgment and expertise to construct the particular procedures and methodology that will satisfy the pertinent statutory mandates.”<sup>246</sup>

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238. *California v. Watt (Watt II)*, 712 F.2d 584, 606 (D.C. Cir. 1983).

239. *Id.* at 606.

240. *Id.* at 591.

241. *Id.* at 606.

242. *Id.* at 600.

243. 865 F.2d 288, 312–13 (D.C. Cir. 1988).

244. *Id.* at 312–13.

245. Pursuant to *Chevron*, if a court finds statutory ambiguity or silence, the court must determine whether the agency’s construction of the statute is reasonable. *Chevron v. Nat. Res. Def. Council*, 467 U.S. 837, 843 (1984).

246. *Hodel*, 865 F.2d at 312.

Courts have also applied *Chevron* deference in prior instances where Interior interpreted ambiguous statutory provisions, and have upheld Interior's authority to calculate royalties owed to the government. In *Independent Petroleum Association of America v. DeWitt*,<sup>247</sup> the D.C. Circuit stated that "courts have regularly applied *Chevron* in royalty cases," and noted that, "Congress has granted rather sweeping authority 'to prescribe necessary and proper rules and regulations and to do any and all things necessary to carry out and accomplish the purposes of [the leasing statutes].'"<sup>248</sup> The court confirmed that this "sweeping authority" extended to "collecting royalties and determining the methods by which they are calculated."<sup>249</sup> The court held that it found "nothing unreasonable" in Interior's refusal to allow deductions for downstream marketing costs in a new rule.<sup>250</sup> However, the court found "no basis" for sustaining Interior's conclusion with respect to a different part of the rule because "[w]hile some reason may lurk behind the government's position, it has offered none."<sup>251</sup> In *California Co. v. Udall*<sup>252</sup>—a case decided prior to *Chevron*—the D.C. Circuit deferred to Interior's interpretation of the word "production" for purposes of calculating royalties, and noted that "[t]he Secretary of the Interior is the statutory guardian of this public interest."<sup>253</sup>

Finally, in *Center for Sustainable Economy v. Jewell*,<sup>254</sup> the petitioner argued that OCSLA required BOEM to explicitly consider and quantify the option value of delaying leasing in specific regions of the Outer Continental Shelf.<sup>255</sup> The D.C. Circuit acknowledged the applicability of option value to federal offshore oil and gas leasing, stating:

More is learned with the passage of time . . . . The true costs of tapping OCS energy resources are better understood as more becomes known about the damaging effects of fossil fuel pollutants. Development of energy efficiencies and renewable energy sources reduces the need to rely on fossil fuels. As safer techniques and more effective technologies continue to be developed, the costs associated with drilling decline. *There is therefore a tangible present economic benefit to delaying the decision to drill for fossil fuels to preserve the opportunity to see what new technologies develop and what new information comes to light.*<sup>256</sup>

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247. 279 F.3d 1036 (D.C. Cir. 2002).

248. *Id.* at 1039–40 (citing 30 U.S.C. § 189 (2012)).

249. *Id.* at 1040.

250. *Id.*

251. *Id.* at 1043.

252. 296 F.2d 384 (D.C. Cir. 1961).

253. *Id.* at 388.

254. 779 F.3d 588 (D.C. Cir. 2015).

255. *Id.* at 610.

256. *Id.* (emphasis added).

However, the Court held that BOEM's failure to quantify option value in its Program was not arbitrary or irrational because the methodology for quantifying option value was not yet "sufficiently established."<sup>257</sup> But the Court noted: "Had the path been well worn, it might have been irrational for Interior not to follow it."<sup>258</sup> Thus, if Interior amends its regulations to require the use of option value for offshore or onshore leasing, the D.C. Circuit's decision would support the rationality of that policy change.<sup>259</sup>

If Interior makes any of the changes recommended in this Article, such as using cost-benefit analysis in its leasing decisions, raising royalty rates in order to account for externality costs, or using option value to set higher minimum bids, its decision may be challenged as failing to comply with its statutory requirements or with the requirements of the Administrative Procedure Act. Interior's interpretation of its statutory mandates would likely be entitled to *Chevron* deference, especially as the agency has particular expertise in the stewardship and valuation of federal natural resources—a complex program for which Interior has been vested with broad authority.<sup>260</sup> The relevant statutes do not preclude Interior from considering environmental or social costs when setting fiscal terms, and provide little guidance on what factors may be considered, aside from "fair market value." Moreover, *Watt II* and *Hodel* reflect judicial deference to Interior's policy judgments as to how to best effectuate the "fair market value" requirement<sup>261</sup> and OCSLA's broad mandate to "balance economic and environmental interests."<sup>262</sup>

Implementation of the changes recommended in this Article would also likely survive review under the Administrative Procedure Act.<sup>263</sup> The Administrative Procedure Act requires courts to "hold unlawful and set aside agency action, findings, and conclusions found to be among other things arbitrary or

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257. *Id.* at 611.

258. *Id.* at 612.

259. While the case addressed offshore leasing, the court's language on the utility of option value is equally applicable to onshore and offshore leasing of coal, oil, and natural gas resources.

260. See, e.g., *Watt II*, 712 F.2d at 606; *Hodel*, 865 F.2d at 308–09, 313; see also *Coal. for Alternatives to Pesticides v. Lyng*, 673 F. Supp. 1019, 1024 (D. Or. 1987) ("So long as the BLM's decisions are not irrational or contrary to law, it may manage the public lands as it sees fit"); *Amoco v. Watson*, 410 F.3d 722, 729 (D.C. Cir. 2005) (upholding BLM's order to an energy company to pay additional royalties, as "deference is particularly appropriate in the context of a complex and highly technical regulatory program, in which the identification and classification of relevant criteria necessarily require significant expertise and entail the exercise of judgment grounded in policy concerns.") (internal citations omitted).

261. See *Watt II*, 712 F.2d at 606.

262. See *Hodel*, 865 F.2d at 308–09 ("The Secretary must make a good-faith effort to balance environmental and economic interests. So long as he proceeds reasonably, however, his decisions warrant our respect.")

263. See 5 U.S.C. §§ 500–706 (2012).

capricious.”<sup>264</sup> Under the deferential “arbitrary and capricious” standard, an agency must “examine the relevant data and articulate a satisfactory explanation for its action including a rational connection between the facts found and the choice made.”<sup>265</sup> An agency can change course, but it should show that “the new policy is permissible under the statute, that there are good reasons for it, and that the agency believes it to be better.”<sup>266</sup> In line with the cases described here and the Supreme Court’s decision in *FCC v. Fox*, Interior would be wise to support future policy changes with reasoned analysis, including an explanation for the change and an appropriate methodology.<sup>267</sup>

Interior would also be acting rationally by using modern economic tools, such as the Social Cost of Carbon and option value, to help evaluate fair market value for the “use of the public lands and their resources.”<sup>268</sup> In fact, the Social Cost of Carbon was developed in response to a lawsuit challenging the Department of Transportation’s failure to monetize climate benefits in its economic assessment of vehicle efficiency standards. In a 2008 decision, the Federal Court of Appeals for the Ninth Circuit found that, due in part to advancements in “scientific knowledge of climate change and its causes,” the agency’s failure to quantify any climate benefits when conducting its economic analysis was arbitrary and capricious.<sup>269</sup> And in 2016, the Seventh Circuit Court of Appeals upheld the Department of Energy’s use of the Social Cost of Carbon in an energy efficiency rulemaking.<sup>270</sup> Thus, a reviewing court will likely find that the use of these tools is reasonable method by which to quantify the cost of relevant environmental externalities.

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264. 5 U.S.C. § 706(2)(A) (2012).

265. *Motor Vehicle Mfrs. Ass’n v. State Farm Mut. Auto. Ins. Co. (State Farm)*, 463 U.S. 29, 43 (1983) (agency decisions are arbitrary if they entirely fail to consider an important aspect of the problem); *Bowman Transp., Inc. v. Arkansas-Best Freight Sys., Inc.*, 419 U.S. 281, 290 (1974) (“[W]e can discern in the Commission’s opinion a rational basis for its treatment of the evidence, and the ‘arbitrary and capricious’ test does not require more.”).

266. *FCC v. Fox Television Stations, Inc.*, 556 U.S. 502, 514–15; *see also Nat’l Ass’n of Home Builders v. EPA*, 682 F.3d 1032, 1037 (D.C. Cir. 2012) (stating that an agency must show “there are good reasons for the new policy”). *But see Fox*, 556 U.S. at 542 (Stevens, J., dissenting) (arguing that both the Administrative Procedure Act and the rule of law “favor stability over administrative whim.”).

267. *See Fox*, 556 U.S. at 515 (stating, “the agency must show that there are good reasons for the new policy. But it need not demonstrate to a court’s satisfaction that the reasons for the new policy are better than the reasons for the old one; it suffices that the new policy is permissible under the statute, that there are good reasons for it, and that the agency believes it to be better”); *see also Hodel*, 865 F.2d at 313–15 (upholding Interior’s offshore leasing plan and referencing agency documents discussing “the methodology and factors used to determine fair market value”).

268. *See* 43 U.S.C. § 1701(a)(9) (2012).

269. *Ctr. for Biological Diversity v. Nat’l Highway Traffic Safety Admin.*, 538 F.3d 1172, 1197–98, 1203 (9th Cir. 2008).

270. *Zero Zone v. U.S. Dep’t of Energy*, 832 F.3d 654, 678–79 (7th Cir. 2016).

*D. Agency Guidance and Executive Level Review*

A cost-benefit analysis framework is also consistent with executive orders for agency decision-making. While most commonly applicable to regulatory impact analysis accompanying proposed rules, the principles that inform executive level review provide a set of best practices that should inform natural resources extraction decisions.<sup>271</sup>

The process that Interior launched to comprehensively review the federal coal program would have analyzed whether the public receives a “fair return” when considering all of the benefits and costs of coal leasing, including social and environmental costs.<sup>272</sup> This process is similar to a proposed rule and its accompanying regulatory impact analysis; Presidential executive orders require agencies to conduct cost-benefit analyses of their regulatory decisions and submit those analyses to scrutiny by the Office of Information and Regulatory Affairs (“OIRA”).<sup>273</sup> While Interior’s programmatic EISs and offshore leasing programs are not subject to OIRA review, the guiding principles of executive review can help inform how Interior should best effectuate its broad mandates.

Executive Order 12,866, which has governed regulatory decision-making since 1993, instructs agencies to “propose or adopt a regulation only upon a reasoned determination that the benefits of the intended regulation justify its costs.”<sup>274</sup> The Executive Order requires agencies to conduct a cost-benefit analysis that includes the benefits and costs anticipated from the regulatory action, including “the protection of the natural environment,” on the benefit side of the ledger and any adverse effects on “health, safety, and the natural environment,” on the cost side.<sup>275</sup> It also directs that benefits and costs be quantified, to the extent feasible.<sup>276</sup>

The Office of Management and Budget’s Circular A-4, issued in 2003, provides best practices for agencies conducting cost-benefit analysis, and recommends that agencies assess costs and benefits comprehensively, because “[w]here all benefits and costs can be quantified and expressed in monetary units, benefit-cost analysis provides decision makers with a clear indication of the most efficient alternative, that is, the alternative that generates the largest

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271. Livermore, *supra* note 176, at 628.

272. Press Release, Dep’t of the Interior, Secretary Jewell Launches Comprehensive Review of Federal Coal Program (Jan. 15, 2016) (on file with author).

273. Exec. Order No. 12,866 § 1(b)(6), 58 Fed. Reg. 51,735 (Sept. 30, 1993); *see also* Exec. Order No. 13,563 § 1, 76 Fed. Reg. 3821 (Jan. 21, 2011) (affirming Exec. Order No. 12,866).

274. *Id.*

275. Exec. Order No. 12,866 § 6(a)(3)(C), 58 Fed. Reg. 51,735 (Oct. 4, 1993).

276. *Id.*

net benefits to society (ignoring distributional effects).”<sup>277</sup> Circular A-4 also cautions agencies against ignoring the potential magnitude of unquantified benefits, because the most efficient rule may not have the “largest quantified and monetized . . . estimate.”<sup>278</sup>

Both Executive Order 12,866 and Circular A-4 remain valid even after President Trump’s Executive Order on “Promoting Energy Independence and Economic Growth.”<sup>279</sup> That Order states:

when monetizing the value of changes in greenhouse gas emissions resulting from regulations, including with respect to the consideration of domestic versus international impacts and the consideration of appropriate discount rates, agencies shall ensure, to the extent permitted by law, that *any such estimates are consistent with the guidance contained in OMB Circular A-4* of September 17, 2003 (Regulatory Analysis), which was issued after peer review and public comment and has been widely accepted for more than a decade as embodying the best practices for conducting regulatory cost-benefit analysis.<sup>280</sup>

Social and environmental externalities fall squarely within the types of costs and benefits that Circular A-4 directs agencies to consider, and to quantify to the extent possible, when deciding how to regulate. Executive orders and agency guidance, therefore, are consistent with a natural resources leasing framework that analyzes the full spectrum of costs and benefits of leasing, and attempts to maximize social welfare through leasing and fiscal decisions.

#### IV. RECOMMENDATIONS FOR REFORM

To better fulfill its statutory mandates under FLPMA, the Mineral Leasing Act, and OSCLA, Interior should update its leasing processes and fiscal terms. The Secretary of the Interior’s 2016 decision to reevaluate the federal coal leasing program indicates that the comprehensive review and reassessment of federal fossil fuel leasing for which this Article advocates is both feasible and justified in light of modern production trends and the current knowledge of the externality costs of fossil fuel production and consumption.<sup>281</sup>

Interior should conduct a programmatic review of its fossil fuel leasing programs to analyze and weigh all of the costs and benefits of leasing, including upstream and downstream climate impacts. Consistent with NEPA, Interior should carefully evaluate the alternatives to leasing, including the alternative of

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277. OFFICE OF MGMT. & BUDGET, CIRCULAR A-4 at 1–2 (Sept. 17, 2003) [hereinafter OMB CIRCULAR A-4].

278. *Id.* at 2.

279. *See* Exec. Order No. 13,783, 82 Fed. Reg. 16,093 (Mar. 28, 2017).

280. *Id.* (emphasis added).

281. *See* U.S. DEP’T OF THE INTERIOR, *supra* note 2.

not leasing any new coal, oil, or natural gas, and evaluate the “energy substitution” effects that would result from different leasing scenarios.<sup>282</sup> Interior should also consider adjusting royalty rates to recoup at least some of the environmental and social costs of production, and eliminate royalty relief provisions that contribute to inefficiently high levels of production. Interior should also incorporate option value into its planning and bidding processes, to better account for economic, environmental, and social uncertainty.

A socially optimal definition of “fair market value,” then, should include the market price of the resource, the option value of leasing that resource, and the social cost of production—the cost to taxpayers from production on public lands due to non-internalized externalities. These suggested reforms are described in more detail below.

*A. Interior Should Prepare Strategic Leasing Plans and Evaluate Whether Its Current Leasing Programs Earn “Fair Market Value” for Taxpayers, by Conducting Cost-Benefit Analysis*

In order to manage a federal fossil fuel leasing program that better serves American taxpayers, Interior should prepare strategic plans for leasing and regularly evaluate potential reforms that have the potential to increase social welfare.

Such strategic plans can be modeled on BOEM’s five-year plans for offshore leasing and should be structured to harmonize with any existing Regional Management Plans. In fact, these regional plans should “tier to” strategic plans and provide information on region-specific energy needs and environmental considerations. These strategic plans should be accompanied by regular programmatic EISs that evaluate the environmental and social effects of alternative leasing scenarios. This analysis is critical to answering two important questions: does leasing now, pursuant to existing fiscal terms, serve the public interest? And, can Interior make adjustments to lease timing, size, or fiscal terms that would increase social welfare?

In its strategic planning process, Interior should evaluate whether it earns “fair market value” for taxpayers as required by FLPMA and OCSLA by analyzing the revenue and other benefits of leasing, as compared to the costs, including social and environmental costs. Interior should use the Social Cost of Carbon and Social Cost of Methane in this analysis. Pursuant to executive orders and legal precedent, if the full benefits of production are accounted for in such an inquiry (such as bonus bids, royalty revenue, and state tax revenue), the full suite of social and environmental costs must be accounted for, as well.<sup>283</sup>

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282. See 42 U.S.C. § 4332(C)(iii) (2012); 40 C.F.R. § 1502.14 (2017) (stating that alternatives analysis “is the heart of the environmental impact statement.”).

283. See OMB CIRCULAR A-4, *supra* note 277, at 2–3; High Country Conservation Advocates v. Forest Serv., 52 F.Supp.3d 1174, 1190–91 (D. Colo. 2014) (holding that it was arbitrary and

Executive Orders 13,563 and 12,866, OMB Circular A-4, and EPA's guidelines for economic analysis all indicate that benefits and costs should be treated in parity, because where all benefits and costs can be quantified and expressed in monetary units, cost-benefit analysis provides decision makers with an indication of the most efficient alternative, that is, the alternative that generates the largest net benefits to society.<sup>284</sup> Relevant environmental and social costs include upstream and downstream greenhouse gas emissions (methane and carbon dioxide), transportation-related externalities (including particulate matter emissions, public fatalities, noise, and congestion), and habitat effects. To the extent that some of these costs and benefits are not quantifiable, they should be analyzed qualitatively.<sup>285</sup>

The result of this analysis would provide a baseline against which to measure potential royalty rate increases; increases to minimum bids; and other policy changes, such as tailoring fossil fuel production to meet any climate goals or ceasing to issue new leases altogether. As a starting point, Interior should adopt BOEM's practice of making a "net social value" determination before proceeding with leasing in any area. This would shine light on relative externality and other costs associated with production in certain regions, which in turn, could affect where, when, and on what terms Interior chooses to lease. From a social welfare maximization perspective, Interior should seek to provide maximum net benefits to the public.

*B. Interior Should Analyze Optimal Fiscal Terms for New Leases, Including Social Cost of Carbon or Social Cost of Methane Royalty "Adders," Among Other Changes Geared to Maximizing Net Benefits*

Interior should comprehensively review its royalty rates for coal, oil, and gas leases in order to assess how an increase in royalty rates might affect total revenue, externality costs, and better meet the mandates of its governing statutes. Interior should consider increasing minimum royalty rates above current levels to account for foreseeable environmental and social costs of production, which currently impose uncompensated costs on the public. The goal is to identify an alternative that maximizes net social benefits.

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capricious to quantify the benefits of coal lease modifications and not the costs, when such analysis was possible using the Social Cost of Carbon).

284. *See id.*; Exec. Order No. 13,563, 76 Fed. Reg. 3821 (Jan. 21, 2011); Exec. Order No. 12,866, 58 Fed. Reg. 51735 (Oct. 4, 1993); EPA, GUIDELINES FOR PREPARING ECONOMIC ANALYSES 11-2 (Dec. 17, 2010).

285. OMB CIRCULAR A-4, *supra* note 277, at 10 ("Even when a benefit or cost cannot be expressed in monetary units, you should still try to measure it in terms of its physical units. If it is not possible to measure the physical units, you should still describe the benefit or cost qualitatively.").

Environmental and social externalities from fossil fuel production vary with the amount of the resource produced; therefore, these costs are best recouped through royalties. A royalty rate that would lead to a more socially optimal level of extraction would account for the cost of unregulated externalities, including carbon dioxide and methane emissions. In considering adjustments to royalty rates, Interior may wish to focus on externalities associated with “upstream” production on federal lands, as opposed to downstream combustion. This is because production externalities are within Interior’s jurisdiction, as they occur on public lands and are closely tied to its statutory mandates to prevent “undue waste”<sup>286</sup> and undue degradation of lands.<sup>287</sup> By contrast, adjusting royalty rates to account for downstream combustion emissions may present somewhat greater legal risk for Interior, and the agency may run into potential issues with “double counting” the cost of combustion emissions if those emissions are addressed by other policies or regulations.

For these reasons, a study that I co-authored quantified and applied an “upstream” Social Cost of Methane adder that accounted for federal coal production methane costs. It used data on fugitive methane emissions from coal mines (which are currently unregulated) and applied the Social Cost of Methane to calculate a surface mine methane adder of approximately \$1 per metric ton of coal (or \$0.90 per short ton), and an underground coal adder of \$8.79 per metric ton (\$7.97 per short ton), as underground coal mining emits more fugitive methane.<sup>288</sup> It then calculated revised royalty rates that would incorporate this methane adder. Using average surface and underground coal prices in the relevant states, the adder would increase royalty rates from 12.5 percent to 18.7 percent for surface-mined coal, and from 8 percent to 28.7 percent for underground coal.<sup>289</sup>

This royalty rate adder would have yielded approximately \$2 billion in additional royalty revenue between 2009 and 2013 for federal coal production in four western states: Wyoming, Colorado, Montana and Utah.<sup>290</sup> Moreover, this royalty rate increase would have provided up to \$2.9 billion in net social benefits, accounting for both increased revenue and decreased externality costs from coal mining.<sup>291</sup> Pursuant to existing regulations, this higher royalty rate

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286. See 30 U.S.C. § 187 (2012).

287. See 43 U.S.C. § 1732(b) (2012).

288. See HEIN & HOWARD, ILLUMINATING COAL COSTS, *supra* note 52, at A11 (surface mines); HEIN, PRIORITIES FOR FEDERAL COAL REFORM, *supra* note 52 at 13 (underground mines).

289. See HEIN & HOWARD, ILLUMINATING COAL COSTS, *supra* note 52, at 7. The royalty adjustment was based on 2015 production-weighted prices in Wyoming (for surface coal) and Colorado and Utah (for underground coal).

290. *Id.* In this study, we used an average elasticity of supply of between 1 and 3 to account for substitution effects from higher royalty rates between coal produced from different basins (federal, state, and private), and among coal, natural gas, oil, and renewable energy sources.

291. *Id.* at 7, app. B, tbl.B13.

could be applied to new leases, modified leases, and lease extensions.<sup>292</sup> And because the Social Cost of Methane rises over time, as methane is a stock pollutant, the royalty rate should also increase over time in order to recoup methane externality costs.<sup>293</sup>

A separate independent study examined the effect of policy scenarios that would increase the federal coal royalty rate or decrease production through a tonnage production cap. The study found that phasing in a lifecycle carbon dioxide royalty adder set at 20 percent of the Social Cost of Carbon—approximately \$15.30 per short ton in 2016—would add nearly \$3 billion in royalty receipts by 2025.<sup>294</sup> Introducing this higher royalty rate, phased-in over 10 years, would also reduce overall carbon dioxide emissions, with or without the Clean Power Plan in place.<sup>295</sup> Thus, both total financial returns and net social welfare would increase with a higher royalty rate.

Interior should also consider adjusting the fiscal terms of leases to account for the transportation externalities associated with transporting oil, gas, and coal long distances from the point of production to end users. Rail transportation, which is used to move approximately 70 percent of all domestic coal,<sup>296</sup> causes multiple externalities including greenhouse gas emissions, particulate matter emissions, increased fatalities, and more. Interior should quantify these costs, and consider charging lessees for them through royalty rate adders.<sup>297</sup> Even without any royalty rate adjustment, these transportation externalities jus-

292. See 43 C.F.R. §§ 3473.3-2(b), 3432.2(c) (2016).

293. HEIN & HOWARD, ILLUMINATING COAL COSTS, *supra* note 52, at tbl.4. Stock pollutants accumulate in the environment over time.

294. SPENCER REEDER & JAMES H. STOCK, VULCAN PHILANTHROPIES, FEDERAL COAL LEASING REFORM OPTIONS: EFFECTS ON CO<sub>2</sub> EMISSIONS AND ENERGY MARKETS: EXECUTIVE SUMMARY 4 (2016), <https://perma.cc/4KXT-BGM8>. This study opted to test an adder equivalent to 20 percent of the Social Cost of Carbon because some of the downstream costs of burning coal were set to be internalized by EPA's Clean Power Plan; using the 20 percent value would thus avoid charging energy producers for that externality cost twice. The study used ICF International's Integrated Planning Model, which is used by EPA and other agencies to model the effects of policy scenarios on energy markets.

295. *Id.* at 6 ("In the royalty adder cases, total royalty receipts for federal coal rise even though production declines."). The royalty increases are modeled as phasing in over 10 years, to roughly model the phasing in of a change in royalty rates as old leases expire and new or renewed leases are signed at the higher royalty rate.

296. U.S. ENERGY INFO. ADMIN., *supra* note 115, at 47 (showing that of the 815,509,000 total short tons of coal transported in 2015, 560,039,000 or 68.67 percent, were transported by rail).

297. In the NYU study, we calculated a transportation adder for Powder River Basin coal, using data on freight train routes and quantifiable externalities, including greenhouse gas and other air emissions, public fatalities, noise, and congestion. These costs totaled approximately \$10 per metric ton of coal (about \$9 per short ton). Applied together, the fugitive methane and transportation adders would result in a larger royalty rate increase—from the current federal royalty rate of 12.5 percent to 82.6 percent for Powder River Basin coal. HEIN & HOWARD, ILLUMINATING COAL COSTS, *supra* note 52, at 7.

tify changing or eliminating existing regulations that generously subsidize coal, oil, and gas transportation.

Each of these modeled reforms would induce some substitution of renewable energy and natural gas for coal, as well as increased energy conservation, resulting in a net decline in greenhouse gas emissions. Yet in all of the externality adder case studies described here, total royalties would increase over the non-adjusted royalty base cases, while coal production would decline.<sup>298</sup> As such, these royalty rate adjustments would result in significant net benefits to the public. Ramping coal production down (as opposed to raising the royalty rate) would achieve similar greenhouse gas emission benefits, but with diminished revenue for states and the federal government.<sup>299</sup> This illustrates one of the primary benefits of fiscal reform, as opposed to setting a cap on federal fossil fuel production: the additional revenue generated from royalty reform would go both to the federal government and to fossil fuel-producing states and communities, which can use this revenue for environmental mitigation, adaptation, education, and infrastructure investment.

Finally, the White House Council of Economic Advisers analyzed an optimal royalty rate from the perspective of maximizing the financial return to taxpayers, as opposed to maximizing social welfare. The study concluded that a policy goal of maximizing the return to taxpayers (leaving aside any environmental benefits) would require royalty rates of 304 percent (equal to approximately a \$30 per short ton royalty charge on Powder River Basin coal), which would curtail future federal coal production by more than half from projected levels (partially offset by increased production from other regions) while increasing revenue by \$2.7 to \$3.1 billion when fully phased-in by 2025.<sup>300</sup>

Interior should analyze and model these or similar alternative royalty rate scenarios in future strategic plans and environmental reviews.<sup>301</sup> This analysis would provide decisionmakers and the public with an alternative that moves towards maximizing social welfare, and better upholds Interior's statutory man-

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298. REEDER & STOCK, *supra* note 294, at 6.

299. *See id.* at 8.

300. CEA COAL REPORT, *supra* note 8, at 3, 4, 25. The CEA study also found that the increase in royalty revenues was "vastly larger than the loss in bonus bid revenue." *Id.* at 25. If it pursues royalty rate adjustments, Interior should take steps to try to keep minimum bids and internal fair market value calculations at historical levels.

301. While a full analysis is beyond the scope of this article, there is also economic literature on the optimal timing of extraction of fossil fuel resources, typically drawing on the Hotelling Rule. *See, e.g.*, Hamid Beladi & Habib A. Zuberi, *Environmental Constraints and a Dynamic Model for Energy Development*, 10 ENERGY ECON. 18, 20 (1988). In addition, some empirical studies have extended the Hotelling Rule to specific case studies to analyze optimal royalty rates in those contexts. *See id.* at 20–28 (evaluating the social optimality of royalty rates in coal lease contracts between the Navajo tribe and coal companies). Other economic studies have analyzed the lifecycle costs of fossil fuel production. *See, e.g.*, Epstein et al., *supra* note 97.

dates to harmonize production with preservation. Economic and scientific understanding of the social and environmental costs of fossil fuel production has markedly improved in the 95 years since the passage of the Mineral Leasing Act. By increasing royalty rates to recoup at least some of the social and environmental costs of fossil fuel production, Interior can significantly increase revenue for states and the federal government, while simultaneously reducing greenhouse gas emissions.

*C. For Each Alternative Scenario, Interior Should Model Energy Substitution and Climate Effects*

Interior should model its selected alternatives' energy production, climate, revenue, and other effects, including downstream greenhouse gas emissions. As part of this analysis, it should analyze the substitution effects among coal, natural gas, oil, and renewable energy sources (on public and private lands) that result from changes in leasing policies, including royalty rates.<sup>302</sup>

It is well settled that coal competes directly with natural gas, nuclear, and renewable energy resources in the generation of electricity. Conducting substitution analysis in an environmental review process is critical to properly analyzing environmental impacts, and, ultimately, to selecting the most efficient alternative. Interior should model each alternative scenario's energy market and greenhouse gas emission effects, which requires accounting for the substitution effects induced by each alternative, as well as increased energy conservation.

In fact, the 2017 decision by the Tenth Circuit Court of Appeals, discussed in Part II, *supra*, highlighted the importance of conducting proper substitution analysis for fossil fuel leasing decisions and their underlying NEPA analysis.<sup>303</sup> As a result, Interior cannot make unsupported assumptions about the climate effects of its leasing decisions and must conduct proper substitution analysis in EISs.

As highlighted in Part II, *supra*, Interior can choose from several models to evaluate the effect of different leasing policies and royalty rates on the energy market and total greenhouse gas emissions. Further, these models can be tailored to adjust baseline scenarios to align with any remaining U.S. climate change goals.<sup>304</sup> Given its capacious statutory mandates, Interior has the au-

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302. Interior may wish to consult with the Council of Economic Advisors in conducting this analysis.

303. *See WildEarth Guardians v. U.S. Bureau of Land Mgmt.*, 870 F.3d 1222, 1233 (10th Cir. 2017) (finding BLM's assertion—that leasing up to 230 million tons of coal per year would not have any effect on total greenhouse gas emissions because an identical amount of coal would be produced elsewhere to “perfectly substitute” for the production from these leases—to be arbitrary and capricious).

304. Secretarial Order 3338 called for an inquiry into how to manage the federal coal program “to meet both the Nation's energy needs and its climate goals, as well as how best to protect the

thority to manage federal fossil fuel production to help meet potential national climate change goals and commitments. As the steward of public lands for present and future generations, Interior has the duty to “take[ ] into account the long-term needs of future generations for renewable and nonrenewable resources,” and to manage federal lands “without permanent impairment of the productivity of the land and the quality of the environment.”<sup>305</sup> FLPMA also provides that federal lands are to be used only for the advancement of the national interest,<sup>306</sup> and that “public lands be managed in a manner that will protect the quality of scientific, scenic, historical, ecological, environmental, air and atmospheric, water resource, and archeological values; that, where appropriate, will preserve and protect certain public lands in their natural condition . . . .”<sup>307</sup>

In light of this authority, Interior should analyze production scenarios in its planning and environmental review processes that would tailor federal production to any remaining U.S. climate change goals. For example, the government could set a national “carbon budget” for federal lands, based on what is needed to meet its climate change goals, and adjust leasing policies for fossil fuels in order to meet that budget. This could be done through an escalating royalty rate designed to decrease federal coal and oil production over time—which would also provide revenue benefits—or through a production cap or moratorium.<sup>308</sup> These options should be analyzed through a programmatic environmental review process and appropriately modeled in order to compare their net effects. Ultimately, Interior will need to weigh the tradeoffs of each alternative, and steer the leasing program to a system that best complies with its dual mandate and earns fair market value for taxpayers.

#### *D. Interior Should Curb Royalty Rate Reductions and Loopholes, Which Impair a Fair Return to Taxpayers*

Relevant to the question of whether federal leasing is structured to ensure a fair return is how royalties are calculated, including whether any deductions or loopholes affect the overall return to the public. Interior should eliminate its existing royalty relief regulations, as they provide improper incentives to companies and hinder the receipt of a fair return.

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public lands from climate change impacts.” U.S. DEP’T OF THE INTERIOR, *supra* note 2, at 8.

305. 43 U.S.C. § 1702(c) (2012).

306. *See id.* § 1701(a)(1).

307. *Id.* § 1701(a)(8).

308. For discussion and analysis of a potential production cap, see Peter Erickson & Michael Lazarus, *How Would Phasing Out U.S. Federal Leases for Fossil Fuel Extraction Affect CO<sub>2</sub> Emissions and 2°C Goals?* 22 (Stockholm Env’t Inst., Working Paper No. 2016-02, 2016), <https://perma.cc/BCX4-ZQRW>.

Under current law, the Secretary of the Interior has discretion to reduce or waive royalties “whenever in [his or her] judgment it is necessary to do so in order to promote development, or whenever in [his or her] judgment the leases cannot be successfully operated under the terms provided therein.”<sup>309</sup> Pursuant to its current regulations, BLM has discretion to grant royalty rate reductions if three requirements are met: (i) the royalty rate reduction encourages the greatest ultimate recovery of the resource; (ii) the rate reduction is in the interest of conservation of the resource; and (iii) the rate reduction is necessary to promote development of the resource.<sup>310</sup> The second of these requirements appears to conflict with the first and third; it is unclear how reducing royalties would advance resource conservation.

Interior should eliminate, or at least amend, its royalty rate reduction regulations. Rate reductions that are “necessary to promote development” of the resource amount to a subsidy for fossil fuels; the government should not be in the business of supporting uneconomical production from public lands, especially at a loss to taxpayers. This regulation is at odds with managing federal fossil fuel programs to maximize the net return to taxpayers, and threatens the efficacy of any future royalty rate adjustments.

*E. Interior Should Evaluate Bidding Reforms That Can Help Secure Fair Market Value for Taxpayers, and Consider the Alternative of Delayed Lease Sales in NEPA Analysis*

At the lease sale stage, Interior should be compensated for the estimated market price of the resource to be leased, as well as the option value of mining or drilling. Furthermore, Interior should consider the alternative of delaying lease sales in its NEPA “alternatives analysis” for proposed lease sales.

Minimum bids should be raised to account for inflation and the option value of leasing, in order to serve as a floor price for fair market value, as originally intended. Accounting for inflation, alone, would raise minimum bids across Interior’s programs.<sup>311</sup> Interior’s minimum bid and fair market value appraisals also fail to account for the option value of fossil fuel leasing, which is the value of waiting for more information on energy prices and extraction risks before deciding whether and when to lease the public’s non-renewable energy resources to private companies.<sup>312</sup> As the D.C. Circuit recently affirmed, there is “a tangible present economic benefit to delaying the decision to drill,” and failing to account for this value undervalues public resources.<sup>313</sup>

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309. 30 U.S.C. § 209 (2012).

310. 43 C.F.R. §§ 3473.3-2(e), 3485.2(c)(1), 3103.4-1(a) (2016).

311. See *supra* Section II.C.2.

312. See Livermore, *supra* note 176, at 589, 593–96.

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

Option value is relevant for both Interior's planning processes and its minimum bids and internal "fair market value" assessments. First, option value should be part of the planning process, to determine when and where to lease tracts. Interior can look to BOEM's final 2017–2022 program for offshore leasing as a starting point. BOEM uses a hurdle price analysis to account for economic uncertainty, and qualitatively considers environmental and social option value when determining when and where to lease.<sup>314</sup>

Second, option value should be a component of minimum bids and bid adequacy procedures. Both BLM and BOEM should evaluate how to incorporate option value into minimum bids for coal, oil, and gas leases. Interior can draw from economic literature on option value in oil drilling, for example, and augment the existing research by providing research funding or organizing working groups to evaluate methods to use option value for leasing. Government agencies play an important role in quantifying new categories of costs and benefits.<sup>315</sup> Indeed, the D.C. Circuit's ruling in *Center for Sustainable Economy v. Jewell* suggests that academic advancements in option value research could even compel BOEM and BLM to quantify the option value associated with their leasing practices.<sup>316</sup> While developing such a methodology will have a discrete upfront cost, once created, this methodology could be used in future government natural resources leasing decisions and could earn the American public significant net benefits from more optimal timing, location, and lease terms.

Third, even setting aside any formal or quantitative use of option value, Interior should consider the alternative of delaying or strategically timing fossil fuel lease sales when it prepares its "alternatives analysis," pursuant to NEPA. Considering a delayed lease sale alternative would require Interior to assess the potential effects of leasing fossil fuels later, when resource prices may be higher, pollution mitigation techniques may be better, or more infrastructure is in place that would reduce transportation costs or externalities, among other possible changes.

Finally, Interior should consider taking steps to make leasing more competitive, such as by moving to a market-based system of leasing that would pit bidders against one another across tracts, based on the quantity of oil, gas, or coal that they seek to produce in a practice called inter-tract bidding.<sup>317</sup> Alternatively, Interior could simply offer fewer tracts for lease at once and eliminate

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314. See BOEM, 2017–2022 OCS PROPOSED FINAL LEASING PROGRAM, *supra* note 73, at 5–20, 8–1–8–19.

315. See Richard L. Revesz, *Quantifying Regulatory Benefits*, 102 CAL. L. REV. 1423, 1425, 1436 (2014). For example, both the Social Cost of Carbon and Value of a Statistical Life are examples of government agencies serving as catalysts for the quantification of important measures of regulatory costs and benefits.

316. See 779 F.3d at 611.

317. COAL PEIS SCOPING REPORT VOL. I, *supra* note 30, at 6–11.

practices like area-wide leasing, which it uses in offshore auctions. This would help to increase competition for leases offered at each auction.

In short, Interior's leasing programs should be structured to provide net benefits to taxpayers by accounting for environmental costs. Structuring its programs in this way would require more analysis through environmental reviews and ongoing planning processes. However, the resulting programs could provide substantial net benefits to taxpayers, and best effectuate Interior's statutory mandates. While partisan politics has been an impediment to a comprehensive legislative response to climate change, the reforms suggested in this Article can be implemented at the agency level pursuant to existing discretionary authority, and have the potential to earn more revenue for fossil fuel producing states and the federal government, while also reducing greenhouse gas emissions.

### CONCLUSION

The federal fossil fuel leasing program is in need of reform. Stagnant fiscal terms have failed to keep pace with inflation, advances in energy production technology, and most notably, scientific and economic understanding of the costs of fossil fuel extraction. Interior, as the steward of public lands, should structure its leasing programs to provide maximum net benefits to the public, including by accounting for climate change costs. Adjusting royalty rates to account for the externality costs of production would ensure that leasing provides net benefits to the public—not just short-term gains for private companies. And modernizing bidding to account for option value and to increase competition for leases would better effectuate Interior's duty to earn fair market value for the use and development of federal lands and resources. The social welfare-maximizing framework proposed here is consistent with legislative history, judicial precedent, and principles of executive agency review that instruct agencies to maximize the net benefits of their policy choices. By increasing revenue to states and the federal government while reducing greenhouse gas emissions, the reforms suggested in this Article can serve as effective policy levers even in the absence of comprehensive climate change legislation.



# CLE READING MATERIALS

## Identifying and Avoiding Conflicts Between Historic Preservation and the Development of Renewable Energy

FOR

2:40 p.m. – 4:00 p.m.

**EMERGING ISSUES IN NATURAL RESOURCES POLICY**

- **Nada Culver**, Senior Counsel and Director, The Wilderness Society's BLM Action Center
- **David J. Hayes**, Executive Director, State Energy and Environmental Impact Center at NYU Law; former Deputy Secretary of the Interior
- **Brenda Mallory**, Executive Director and Senior Counsel, Conservation Litigation Project; former General Counsel for the White House Council on Environmental Quality
- Moderator: **Jayni Hein**, Policy Director, Institute for Policy Integrity

**PLEASE RETURN TO REGISTRATION TABLE**

# IDENTIFYING AND AVOIDING CONFLICTS BETWEEN HISTORIC PRESERVATION AND THE DEVELOPMENT OF RENEWABLE ENERGY

DAVID A. LEWIS\*

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\* The author is grateful to Professor Peter Byrne and Tersh Boasberg, whose class on Historic Preservation law at Georgetown University Law Center inspired this article; to Jeff Kehne, who introduced the author to the practice of wind and solar project development; and to the staff of the *New York University Environmental Law Journal*, whose efforts greatly improved the final product. Any errors are the author's alone. The author is an attorney in private practice in Boston, Massachusetts, and the views contained herein are his alone.

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## INTRODUCTION

This paper explores actual and potential conflicts between the preservation of historic resources and the development of new renewable energy projects and transmission infrastructure.

In recent years, laws protecting historic resources have increasingly conflicted with the development of utility-scale renewable energy sources and with the essential high-voltage transmission lines that connect such sources to the end users.<sup>1</sup> Conflicts between efforts to preserve historic resources on the one hand, and efforts to develop utility-scale renewable energy<sup>2</sup> and transmission projects on the other, arise when such projects either directly disturb historic sites or introduce adverse aesthetic and other effects on historic landmarks and landscapes.<sup>3</sup> Some efforts to develop renewable energy sources have been stalled or thwarted entirely upon meeting with friction from historic preservation

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<sup>1</sup> See, e.g., *Harrison v. United States Dep't of Army*, No. 3:08CV-105-H, 2009 WL 3347109, at \*1 (W.D. Ky. 2009) (involving a challenge brought under federal historic preservation laws by owners of historic properties in an effort to prevent the alignment of a transmission line in Kentucky from affecting historic properties) (discussed in Section II.B, *infra*); *Quechan Tribe of the Fort Yuma Indian Reservation v. U.S. Dep't of the Interior* (*Quechan Tribe I*), 755 F. Supp. 2d 1104, 1106 (S.D. Cal. 2010) (also involving a challenge brought under federal historic preservation laws by members of a California tribe against a proposed utility-scale solar project on federal land) (discussed in Section III.A, *infra*). Cases addressing similar concerns are addressed throughout.

<sup>2</sup> This research is concerned primarily with solar, wind, and geothermal because those three sources are relatively newly emerging, yet established enough to raise systemic concerns about historic preservation conflicts under federal law. See, e.g., Martin J. Pasqualetti, *Opposing Wind Energy Landscapes: A Search for Common Cause*, 101 ANNALS ASS'N AM. GEOGRAPHERS 907, 907–08 (2011) (noting that wind energy is one of the most widely adopted renewable energy sources and that wind energy faces pervasive land use conflicts). However, many of the issues raised and conclusions drawn herein will apply also to long-established renewable sources (e.g., hydro) as well as to those that are still at various stages of development and not yet available at utility scales (e.g., tidal). On the other hand, certain bio-fuels (e.g., corn-derived ethanol) may have natural synergies with the preservation of historic agricultural landscapes. Bio-fuels are not discussed in this research.

<sup>3</sup> See Alan P. Buchmann, *Electric Transmission Lines and the Environment*, 21 CLEV. ST. L. REV. 121, 123 (1972) (“As the chairman of one of the most affected electric companies has put it: ‘There is no known way to produce, transmit, and distribute electric energy without some effect on the natural environment.’”) (citations omitted); Sean F. Nolon, *Negotiating the Wind: A Framework to Engage Citizens in Siting Wind Turbines*, 12 CARDOZO J. CONFLICT RESOL. 327, 337–42 (2011) (describing impacts to sites of archaeological, cultural, and religious significance, among other resources impacted by wind turbines); see also Uma Outka, *The Energy-Land Use Nexus*, 27 J. LAND USE & ENVTL. L. 245, 251–52 (2012) (recognizing the conflict between utility-scale solar energy generation facilities and conservation goals); Dean B. Suagee, *Consulting with Tribes for Off-Reservation Projects*, 25 NAT. RESOURCES & ENV'T. 54, 54–55 (2010) (describing the adverse effect that geothermal projects can have on historic tribal sites); Lynne Gillette et al., *Using Collaboration to Address Renewable Energy Siting Challenges*, FED. LAW., June 2009, at 50, 51 (describing concerns with solar, wind and transmission projects).

laws.<sup>4</sup> On other occasions, renewable energy and transmission project developers, working with federal officials, have sought to circumvent or weaken historic preservation laws in an attempt to speedily construct new energy generation and transmission infrastructure.<sup>5</sup> Both outcomes are undesirable. The emerging pattern of conflict between long-standing historic preservation laws on one side, and the relatively new development of carbon-free, renewable energy sources on the other, concerns advocates of both because preservation and renewable energy share many common goals.<sup>6</sup>

Developers of utility-scale energy sources and transmission lines routinely run into conflicts with competing land use interests.<sup>7</sup> Conventional power sources, especially coal and nuclear

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<sup>4</sup> See *La Cuna de Aztlan Sacred Sites Prot. Circle Advisory Comm. v. Dep't of Interior*, No. 2:11-CV-00395-ODW, 2012 WL 2884992, at \*3 (C.D. Cal. July 13, 2012) (challenging a utility-scale solar project on federal land in California and alleging violations of federal historic preservation laws). The Cape Wind project in the Nantucket Sound off of the coast of Massachusetts, discussed *infra* in Section III, has faced multiple citizen-led challenges and has led to delaying the development of the what would be the country's first offshore wind project. See Kenneth Kimmell & Dawn Stolfi Stalenhoef, *The Cape Wind Offshore Wind Energy Project: A Case Study of the Difficult Transition to Renewable Energy*, 5 GOLDEN GATE U. ENVTL. L.J. 197, 211–12 (2011); see also Iva Ziza, *Siting of Renewable Energy Facilities and Adversarial Legalism: Lessons from Cape Cod*, 42 NEW ENG. L. REV. 591, 613–20 (2008).

<sup>5</sup> See *Pit River Tribe v. U.S. Forest Service*, 469 F.3d 768 (9th Cir. 2006) (ruling that federal agencies responsible for permitting a geothermal project in California failed, *inter alia*, to properly follow federal historic preservation laws' requirements to consult with Native Americans reversing long-delayed leases between the geothermal project's developer and the federal government), (discussed in Section III, *infra*); see also *Quechen Tribe I*, 755 F. Supp. 2d at 1104 (granting an injunction to delay a utility-scale solar project because the federal Bureau of Land Management failed to comply with federal historic preservation laws).

<sup>6</sup> See discussion *infra* Section I on the parallel goals of historic preservation and renewable energy development. See also A. Kandt et al., NATIONAL RENEWABLE ENERGY LABORATORY, DEP'T OF ENERGY, NREL/TP-7A40-51297, IMPLEMENTING SOLAR PV PROJECTS ON HISTORIC BUILDINGS AND IN HISTORIC DISTRICTS 1 (2011); Jennifer Kuntz, *A Guide to Solar Panel Installation at Grand Central Terminal: Creating a Policy of Sustainable Rehabilitation in Local and National Historic Preservation Law*, 10 VT. J. ENVTL. L. 315, 328 (2009) (noting common goals of preservation and sustainability and the need for compromise and tradeoffs among competing objectives); George Musser, *Solar Panels Versus Historic Districts: A Conflict We Need to Resolve*, SCI. AM. (Jul. 28, 2010), <http://blogs.scientificamerican.com/solar-at-home/2010/07/28/solar-panels-versus-historic-districts-a-conflict-we-need-to-resolve>.

<sup>7</sup> See generally, Mary A. Moran, *Transmission Line Siting: Local Concerns Versus State Energy Interests*, 19 URB. L. ANN. 183 (1980) (discussing conflicts with state and local land use regulations arising in transmission facility siting

power plants, are often treated as unwelcome neighbors and are often opposed through protest,<sup>8</sup> litigation,<sup>9</sup> and targeted regulation.<sup>10</sup> Renewable energy projects seemingly would be more

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efforts and collecting cases involving such conflicts); Mason Willrich, *The Energy-Environment Conflict: Siting Electric Power Facilities*, 58 VA. L. REV. 257 (1972) (identifying regulatory regimes implicated in transmission facility siting). One of the seminal cases involving opposition to utility-scale power facilities and transmission infrastructure occurred at the dawn of the modern environmental movement and implicated renewable power, transmission lines to carry that power to market, and historic preservation. See *Scenic Hudson Pres. Conference v. Fed. Power Comm'n*, 354 F. 2d 608 (2d Cir. 1965). In *Scenic Hudson*, nascent environmental groups challenged the development of a \$162,000,000 pumped storage facility in the Hudson River Valley of upstate New York. *Id.* at 611. The Second Circuit specifically found that the Federal Power Commission was required to consider “conservation of natural resources, the maintenance of natural beauty, and the *preservation of historic sites*” in planning the development of the hydro resources, *id.* at 614 (emphasis added), and reversed the Commission order authorizing the facility as having neglected to consider the full record, including the environmental and historical impacts. *Id.* at 624 (“The Commission’s renewed proceedings must include as a basic concern the preservation of natural beauty and of national historic shrines . . .”).

<sup>8</sup> See Michael B. Gerrard, *The Victims of NIMBY*, 21 FORDHAM URB. L.J. 495, 496 (1993) (discussing “not in my backyard” protests); see also Denis Binder, *NEPA, NIMBYs and New Technology*, 25 LAND & WATER L. REV. 11, 19 (1990). See generally Hilary Schaffer Boudet & Leonard Ortolano, *A Tale of Two Sitings: Contentious Politics in Liquefied Natural Gas Facility Siting in California*, 30 J. PLANNING EDUC. & RES. 5 (2010) (highlighting cases involving opposition to energy infrastructure development).

<sup>9</sup> See Elise N. Zoli, *Power Plant Siting in a Restructured World: Is There Light at the End of the Tunnel?*, 16 NAT. RESOURCES & ENV'T 252, 256 (2002); see also *Coal Victories Across the Nation!*, SIERRA CLUB, <http://www.sierraclub.org/environmentallaw/coal/victories.aspx> (last visited Mar. 2, 2013) (collecting recent lawsuits in opposition to coal-fired power plants particularly). See generally, James R. Tourtellotte, *Nuclear Licensing Litigation: Come on in, The Quagmire Is Fine*, 33 ADMIN. L. REV. 367 (1981) (discussing the regulatory regime for nuclear power facility development and associated litigation).

<sup>10</sup> The relatively recent increase in natural gas extraction through the process known as “hydrofracking” has led state and local governments to regulate the practice more stringently. *Wallach v. Dryden*, 16 N.E.3d 1188 (N.Y. 2014); see also, e.g., Michelle L. Kennedy, *The Exercise of Local Control Over Gas Extraction*, 22 FORDHAM ENVTL. L. REV. 375, 386–90 (2011) (collecting cases and describing local regulations impacting natural gas extraction in Mid-Atlantic and Northeastern states); John M. Smith, *The Prodigal Son Returns: Oil and Gas Drillers Return to Pennsylvania with a Vengeance, Are Municipalities Prepared?*, 49 DUQ. L. REV. 1, 18–23 (2011) (advocating for local control over fracking). With regard to renewable sources, the trend has been for targeted land use controls to encourage solar but to regulate the adverse effects of wind. See Patricia E. Salkin, *Renewable Energy and Land Use Regulation (Part 1)*, ALI-ABA BUS. L. COURSE MATERIALS J. 47, 59–62 (Feb. 2010) (collecting regulation and incentive programs for small-scale solar projects). See generally Patricia E. Salkin, *Renewable Energy and Land Use Regulation (Part 2)*, ALI-ABA BUS. L. COURSE MATERIALS J. 27 (Apr. 2010) (collecting regulations and cases regarding

welcome neighbors than coal or nuclear plants because of the air pollution and climate-related environmental benefits of renewable source projects.<sup>11</sup> However, renewable energy projects are instead often subject to vigorous opposition,<sup>12</sup> and are moreover at a disadvantage relative to conventional generators from the perspective of land use conflict because of their size. Utility-scale renewable energy and transmission projects benefit from economies of scale,<sup>13</sup> so solar and wind developments tend to have very large physical “footprints.”<sup>14</sup> Whereas coal-fired plants require anywhere from a few hundred to one or two thousand acres, utility-scale solar and wind projects frequently occupy footprints extending over thousands of acres.<sup>15</sup> The larger

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wind generation facilities).

<sup>11</sup> See Benjamin K. Sovacool, *Exploring and Contextualizing Public Opposition to Renewable Electricity in the United States*, 1 SUSTAINABILITY 702, 708 (2009) (noting that renewable sources have clear environmental advantages over conventional sources of electricity supply even taking into account the problems that renewable sources create).

<sup>12</sup> See, e.g., Robert Glennon & Andrew M. Reeves, *Solar Energy's Cloudy Future*, 1 ARIZ. J. ENVTL. L. & POL'Y 91, 116 (2010) (describing objections to utility-scale solar projects); Ophir Stemmer, *Clearing the Air: A Comparison of Regulatory Frameworks for Siting Wind Farms*, J. ENERGY & ENVTL. L., 85, 88 (2011) (describing opposition to wind projects); Randy T. Simmons & Ryan M. Yonk, *Energy Regulation: Impacting Traditional and Green Energy Projects*, CENTER. FOR PUB. LANDS AND RURAL ECON. 15–22 (discussing opposition to solar, hydro, and geothermal projects).

<sup>13</sup> See, e.g., MICHAEL MENDELSON ET AL., UTILITY-SCALE CONCENTRATING SOLAR POWER AND PHOTOVOLTAICS PROJECTS: A TECHNOLOGY AND MARKET OVERVIEW 1 n.8 (2012) (discussing the benefits of economies of scale inherent in utility-scale solar projects); CHI-JEN YANG, ELECTRICAL TRANSMISSION: BARRIERS AND POLICY SOLUTIONS 12 (2009); Martin Junginger et al., *Global Experience Curves for Wind Farms*, 33 ENERGY POL'Y 133 (2005) (showing that the price per turbine for wind farms decreases dramatically as the size of the order increases).

<sup>14</sup> See Gillette et al., *supra* note 3 at 50 (noting that wind turbines are widely dispersed and that solar technologies require large amounts of land). Geothermal projects are a notable exception, and such projects may occupy only a couple of hundred of acres. See MASSACHUSETTS INSTITUTE OF TECHNOLOGY, THE FUTURE OF GEOTHERMAL ENERGY: IMPACT OF ENHANCED GEOTHERMAL SYSTEMS (EGS) ON THE UNITED STATES IN THE 21ST CENTURY 8-7 to 8-8 (2006) [hereinafter FUTURE OF GEOTHERMAL]; Sara C. Bronin, *Curbing Energy Sprawl with Microgrids*, 43 CONN. L. REV. 547, 553–58 (2010) (discussing the adverse environmental and landscape effects of large footprint renewable energy projects). The concept of renewable energy projects having large landscape “footprints” should not be confused with the concept of fossil fuel energy sources having large “carbon footprints” (i.e., generating large emissions of carbon dioxide, methane, or similar gases).

<sup>15</sup> Glennon & Reeves, *supra* note 12 at 104 (listing average land-area-per-megawatt generated for various energy sources). For example, designs for Cape

renewable source projects are more likely to conflict with historic resources than the smaller conventional sources merely because there is greater opportunity for such conflicts to occur over the large footprint of renewable sources.<sup>16</sup> Transmission lines face a similar problem, requiring narrow but uninterrupted corridors that run for dozens to hundreds of miles.<sup>17</sup> The large footprints of solar, wind, and transmission projects increase the likelihood that some portion of the project will adversely affect a historic resource, setting up either a potential or an actual conflict between preservation and renewable energy development.<sup>18</sup>

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Wind propose the project will be constructed over twenty-four square miles. *See* ADVISORY COUNCIL ON HISTORIC PRES., COMMENTS OF THE ADVISORY COUNCIL ON HISTORIC PRESERVATION ON THE PROPOSED AUTHORIZATION BY THE MINERALS MANAGEMENT SERVICE FOR CAPE WIND ASSOCIATES, LLC TO CONSTRUCT THE CAPE WIND ENERGY PROJECT ON HORSESHOE SHOAL IN NANTUCKET SOUND, MASSACHUSETTS (Apr. 2, 2010) [hereinafter ACHP COMMENTS]. Although renewable projects often have a larger footprint than conventional projects at the generation site, conventional sources frequently also have significant land use effects far away from the generation site. For example, coal plants require mining operations that are generally not colocated but that can disturb huge land areas. *See generally* Vasilis Fthenakis & Hyung Chul Kim, *Land Use and Electricity Generation: A Life-Cycle Analysis*, 13 RENEWABLE & SUSTAINABLE ENERGY REVS. 1465 (2009) (describing the land use effects of renewable energy projects as compared to conventional projects, including the effects of obtaining fuel for conventional projects).

<sup>16</sup> *See* Suagee, *supra* note 3 (describing significance of historic landscapes to Native Americans and recognizing that renewable energy projects have large footprints).

<sup>17</sup> For instance, the proposed Zephyr Project from Wyoming to California is expected to be nine hundred fifty miles long. Alexandra B. Klass & Elizabeth J. Wilson, *Interstate Transmission Challenges for Renewable Energy: A Federalism Mismatch*, 65 VAND. L. REV. 1801, 1826 (2012). The CapX2020 transmission project between North Dakota and Minnesota is planned to stretch six hundred miles, and another Midwest project, stretching from Iowa to Chicago will run approximately five hundred miles. *Id.* at 1834–35. The SunZia transmission line between Arizona and New Mexico is proposed to be four hundred sixty miles. *Id.* at 1826. *See also* *SunZia Transmission Line Project*, BUREAU OF LAND MGMT., [http://www.blm.gov/nm/st/en/prog/more/lands\\_realty/sunzia\\_southwest\\_transmission.html](http://www.blm.gov/nm/st/en/prog/more/lands_realty/sunzia_southwest_transmission.html). A final example, though hardly the last long transmission project under consideration or under construction, is the Atlantic Wind Connection, a “backbone” transmission line proposed to run offshore from New Jersey to Virginia along an expanse of eight hundred twenty miles or more. *See Commercial Renewable Energy Transmission on the Outer Continental Shelf (OCS) Offshore Mid-Atlantic States, Notice of Proposed Grant Area and Request for Competitive Interest (RFCD) in the Area of the Atlantic Wind Connection Proposal*, 76 Fed. Reg. 79206 (Dec. 21, 2011).

<sup>18</sup> *See* Pasqualetti, *supra* note 2, at 910–11 (describing the impacts on historic resources as well as the size of various wind projects as part of the basis of concern raised by opponents to such projects). Many objections to renewable energy sources, wind in particular, relate to the visual impact of the energy

The adverse effect on historic resources by utility-scale renewable energy and transmission projects slows development of such resources when federal historic preservation laws are triggered.<sup>19</sup> Parties opposed to renewable energy and transmission line projects have used historic preservation laws to slow or stop utility-scale renewable energy projects and are likely to do so again in the future.<sup>20</sup> Yet the objectives animating historic preservation and renewable energy development are surprisingly similar.<sup>21</sup> Moreover, federal historic preservation laws do not prohibit all adverse effects on historic resources; rather, federal preservation laws prescribe planning and consultation to encourage agency decisions that avoid the worst effects.<sup>22</sup> Historic preservation can both protect historic resources and play an important role in the progressive efforts required to mitigate climate change, provided historic preservation laws and advocates are flexible enough to respond to and assimilate new technologies. Existing federal historic preservation laws can remain faithful to

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collection devices on landscapes of great import to surrounding communities. *Id.* at 914–15. Often historic resources are part of those landscapes, and historic resources are frequently an important part of a communities' identity. Even geothermal projects, which are largely subterranean, have effects on historic resources; some tribes regard hot springs as sacred places. *See* Suagee, *supra* note 3, at 55.

<sup>19</sup> This research focuses primarily on the influence of federal laws, although state and local land use laws also play an important role in facility and transmission siting. *See, e.g.*, Hannah Wiseman et al., *Formulating a Law of Sustainable Energy: The Renewables Component*, 28 PACE ENV'T L. REV. 827, 870 (2011) (describing state and local laws relevant in the siting of wind facilities); Klass & Wilson, *supra* note 17, at 1827 (noting that it is “impossible to discuss renewable energy or interstate transmission siting without placing a significant emphasis on the states.”).

<sup>20</sup> *See infra* Sections II–III; *see also* Glennon & Reeves, *supra* note 12, at 116–23 (describing challenges to the development of solar projects and new transmission on public lands in the western United States); Susan Lorde Martin, *Wind Farms and NIMBYs: Generating Conflict, Reducing Litigation*, 20 FORDHAM ENVTL. L. REV. 427 (2010) (discussing opposition to wind projects generally, describing causes of action raised in litigation opposing wind projects, and suggesting that opposition to wind farms is unlikely to abate).

<sup>21</sup> *See infra* Section I.A–B.

<sup>22</sup> *See* National Mining Ass'n. v. Fowler, 324 F.3d 752, 753 (D.C. Cir. 2003) (noting that federal historic preservation law is “essentially a procedural statute . . . [that] imposes no substantive standards . . .”) (internal quotations and citations omitted); Narragansett Indian Tribe v. Warwick Sewer Auth., 334 F.3d 161, 166 (1st Cir. 2003) (holding that federal agencies subject to federal historic preservation laws are not directed to “reach particular outcomes”); *see also* Melissa A. MacGill, *Old Stuff Is Good Stuff: Federal Agency Responsibilities Under Section 106 of the National Historic Preservation Act*, 7 ADMIN. L.J. AM. U. 697, 700 (1993).

policy objectives while still accommodating new technologies that promise other benefits.<sup>23</sup> As discussed below, modest administrative reforms to encourage coordination and planning are necessary to forestall future conflicts between preservation and renewable energy development and to allow much-needed renewable energy development to proceed in earnest.

Section II provides important background information for this discussion. The Section first identifies the animating goals of historic preservation and the equally laudable (and surprisingly parallel) objectives of renewable energy development. Section II then examines barriers to the development of new renewable energy sources and transmission capacity. Finally, Section II concludes with an overview of federal historic preservation law, focusing on those aspects of federal law most germane to renewable energy and transmission projects, especially those that affect tribal lands.

This analysis distinguishes between renewable energy *generation* projects and energy *transmission* (i.e., high voltage power line) projects because these two types of development operate in different markets and face different issues and obstacles.<sup>24</sup> However, the two types of projects are inextricably linked, and barriers to the development of one will impact the viability of the other.<sup>25</sup> Adding transmission capacity is essential to

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<sup>23</sup> See Kuntz, *supra* note 6 at 334 (arguing that preservation of historic structures is compatible with installing new technologies, such as improved windows, solar panels, and modern building materials); see also Christopher Parkin, *A Comparative Analysis of the Tension Created by Disability Access and Historic Preservation Laws in the United States and England*, 22 CONN. J. INT'L L. 379, 416 (2006) (discussing historic preservation laws' ultimate acceptance of technologies enabling universal access to historic buildings by engaging in "[c]reative planning and construction").

<sup>24</sup> See Ashley C. Brown & Damon Daniels, *Vision Without Site; Site Without Vision*, 16 ELECTRICITY J. 23 (2003) (noting that generation, transmission, and distribution are separate and unbundled businesses); Klass & Wilson, *supra* note 17, at 1803, 1829 (discussing differences between renewable energy development and transmission development). Compare YANG, *supra* note 13, with CHI-JEN YANG ET AL., WIND POWER: BARRIERS AND POLICY SOLUTIONS (2008) and Glennon & Reeves, *supra* note 12 (outlining issues and obstacles in the development of transmission, wind, and solar projects, respectively).

<sup>25</sup> Renewable sources are entirely reliant upon transmission lines to be economically viable. See AM. WIND ENERGY ASS'N & SOLAR ENERGY INDUS. ASS'N, GREEN POWER SUPERHIGHWAYS: BUILDING A PATH TO AMERICA'S CLEAN ENERGY FUTURE 1 (2009). Unlike coal and natural gas, wind, solar, and geothermal fuel sources must be "harvested" where located, so transmission lines are necessary to move the electricity from the windy or sunny place to the load center where electricity is needed. See Klass & Wilson, *supra* note 17, at 1802.

developing utility-scale renewable sources.

Section III of this paper examines transmission projects, the impacts of such projects on historic landscapes, and the relationship between historic preservation and new transmission development. Section III addresses two issues likely to be relevant to the development of future transmission projects. The first issue examines when federal preservation review is required in the planning and development of transmission projects. The second issue considers the treatment, under federal preservation laws, of efforts to “segment” large projects into multiple shorter, discrete projects to minimize or avoid review on those segments that do not independently trigger the federal laws. This Section concludes with recommendations that preservation of historic resources be included in transmission planning from the earliest stages such that spatial planning and transmission capacity planning occur simultaneously. This Section also recommends that transmission projects be subject to segmentation analysis only if the segmented project has an independent justification for its development. Finally, this Section concludes with the recommendation that substantive review of transmission projects’ effects on historic resources should be considered only after other options are exhausted.

Section IV examines utility-scale renewable energy projects with an emphasis on the impacts of such projects on historic tribal resources and federally controlled lands, two areas where multiple conflicts have occurred to date. This Section first analyzes whether federal laws adequately protect historic resources from the adverse effects of utility-scale renewable energy projects on federal lands. This Section then addresses whether historic designation in the National Register of Historic Places is the appropriate mechanism for protecting vast seascapes that are likely to be the location for offshore wind resource development. This Section recommends that federal agencies engage in zoning-like spatial planning to identify areas for renewable energy development. This spatial planning process should include more stringent, substantive historic preservation requirements as well as an exception to allow projects of special merit.

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Similarly, transmission lines, which are quite costly to erect, are useless if they are not carrying power from generation sites to load centers. AMERICAN WIND ENERGY ASS’N & SOLAR ENERGY INDUS. ASS’N, GREEN POWER SUPERHIGHWAYS: BUILDING A PATH TO AMERICA’S CLEAN ENERGY FUTURE 7 (2009) (describing the remoteness of wind resources).

Sections III and IV examine recent cases, federal regulations, and policies to identify conflicts arising between historic and renewable energy resources. These two analytical Sections then look to analogous situations involving land use conflicts to assess how the historic preservation efforts have addressed new and conflicting development product types in the past. Both Sections conclude that historic and renewable energy resources can coexist in such a way that both meet their objectives. Section V offers closing thoughts on the future of conflicts between historic preservation and the development of renewable resources and new transmission lines.

#### I. BACKGROUND INFORMATION ON HISTORIC PRESERVATION AND ENERGY PROJECT DEVELOPMENT

Conflicts between historic preservation and the development and transmission of new renewable energy sources are similar to other land use conflicts. Land use conflicts generally result from either differing visions of the shaping of the built environment<sup>26</sup> or the adverse effects of one development on a neighbor.<sup>27</sup> Often in

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<sup>26</sup> Conflicts between neighbors over the shaping of the built environment include disputes about demographic changes (e.g., gentrification), opposition to various types of new projects (e.g., apartments, roads, shopping malls, factories, mines), and concerns about land use changes in general (e.g., sprawl and the conservation of land), among numerous others. See JOHN C. BERGSTROM ET AL., *LAND USE PROBLEMS AND CONFLICTS: CAUSES, CONSEQUENCES AND SOLUTIONS* 1 (2004); see also Donald C. Bryant Jr. & Henry W. McGee Jr., *Gentrification and the Law: Combatting Urban Displacement*, 25 WASH. U. J. URB. & CONTEMP. L. 43, 50–53 (1983) (describing conflicts with historic preservation and other urban policy objectives); Buchmann, *supra* note 3 (collecting cases involving disputes over the aesthetic impacts of transmission lines); David R. Godschalk, *Land Use Planning Challenges: Coping with Conflicts in Visions of Sustainable Development and Livable Communities*, 70 J. AM. PLAN. ASS'N 5, 5 (2004); Nolon, *supra* note 3 (discussing conflicts between wind farms and neighbors); Sager A. Williams Jr., *Limiting Local Zoning Regulation of Electric Utilities: A Balanced Approach in the Public Interest*, 23 U. BALT. L. REV. 565, 587 (1994) (discussing conflicts between transmission lines and other land uses).

<sup>27</sup> See Orlando E. Delogu, *The Dilemma of Local Land Use Control: Power Without Responsibility*, 33 MAINE L. REV. 15, 17–18 (1981) (listing development types that communities frequently oppose); Barak D. Richman, *Mandating Negotiations to Solve the NIMBY Problem: A Creative Regulatory Response*, 20 J. ENV'T'L L. 223 (2001) (describing “NIMBY” land use conflicts as a result of a project’s opponents bearing the costs of the project without receiving any of the benefits). Another way of framing these two categories of disputes is in regards to “entitlements” and “liabilities,” two theories described in the seminal property rights and torts paper by Calabresi and Melamed. Guido Calabresi & A. Douglas Melamed, *Property Rules, Liability Rules, and Inalienability: One View of the Cathedral*, 85 HARV. L. REV. 1089 (1972).

land use conflicts each of the competing interests has worthy objectives.<sup>28</sup> Such is the case with historic preservation and renewable energy development: each has independent value, and neither is intrinsically more worthy of preferential treatment than the other, but historic preservation and renewable energy development occasionally conflict with respect to land use.<sup>29</sup> However, the existence of a federal historic preservation regime and the absence of analogous federal land use law encouraging the development of renewable energy sources<sup>30</sup> gives some advantage to parties interested in protecting historic resources.<sup>31</sup>

This Section provides important context for understanding the conflicts between historic preservation and renewable energy development. First is an examination of the objectives of historic

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<sup>28</sup> See R. Lisle Baker, *My Tree Versus Your Solar Collector or Your Well Versus My Septic System?—Exploring Responses to Beneficial but Conflicting Neighboring Uses of Land*, 37 B.C. ENV'TL AFF. L. REV. 1, 4 (2010) (describing how incompatible neighboring uses can both be “good” uses even when they impose adverse effects on a neighbor or neighbors, and examining the role of zoning, nuisance law, first in time preference, and other conflict resolution mechanisms to resolve such incompatibilities).

<sup>29</sup> See *infra* Section I.A.

<sup>30</sup> A broad array of federal, state, and local laws affect renewable energy and transmission development. See Wiseman et al., *supra* note 19 (describing the regulatory regime relevant to renewable energy and transmission project siting and development); David H. Meyer & Richard Sedano, *Transmission Siting and Permitting*, in DEP'T OF ENERGY, NATIONAL TRANSMISSION GRID STUDY ISSUE PAPERS, at E-11 (2002). Compared to renewable power generation, transmission line development is subject to a much more comprehensive set of federal laws: the Federal Power Act and subsequent legislation, which together coordinate federal activity pertaining to developing new transmission capacity. Klass & Wilson, *supra* note 17, at 1814. However, even the federal transmission regime is largely silent on the siting of new transmission capacity, because siting falls largely in the realm of land use regulation, an area of law long reserved to the states. *Id.* at 1828; Uma Outka, *Environmental Law and Fossil Fuels: Barriers to Renewable Energy*, 65 VAND. L. REV. 1679, 1693–96 (describing the lag in affirmative federal law for renewable energy development).

<sup>31</sup> See Wiseman et al., *supra* note 19, at 891–901 (describing the absence of a well-formed law regarding the development of renewable energy sources). Although the requirements of federal historic preservation laws applicable to renewable energy and transmission projects are procedural and do not dictate substantive outcomes, courts have routinely required projects to adhere to the requisite procedures. See *Cal. Wilderness Coal. v. Dep't of Energy*, 631 F.3d 1072, 1083 (9th Cir. 2011) (reversing a decision by the United States Department of Energy to engage in a process for planning transmission corridors without first complying with applicable federal historic preservation laws); *Pit River Tribe v. U.S. Forest Serv.*, 469 F.3d 768 (9th Cir. 2006) (delaying the commencement of federal leases to geothermal energy developers due to the United States Forest Service's failure to comply with historic preservation laws). These cases and other are discussed in detail *infra* in Sections II and III.

preservation and renewable energy development. Next, this Section summarizes barriers to new renewable source and transmission projects. These barriers demonstrate the imperative to move thoughtfully and expediently past preservation-related land use conflicts stalling renewable energy development. Finally, this Section sets forth the federal procedures for reviewing the effects on historic resources caused by federally authorized renewable energy generation and transmission projects.

The objectives of historic preservation are important and the laws protecting historic resources must be faithfully followed, but federal historic preservation laws ought not and need not be a continued barrier to renewable energy development.

#### A. *Objectives of Historic Preservation*

The fundamental purpose of historic preservation is to preserve historic resources.<sup>32</sup> Multiple factors animate this overriding objective. Despite what some developers might think, historic preservation is not motivated by mere nostalgia for the past or by obstinacy against new developments.<sup>33</sup> Rather, as described below, the animating objectives of historic preservation include patriotism, community building, local economic development, and, increasingly, environmentalism.<sup>34</sup>

##### 1. *Patriotism*

Patriotism motivates historic preservation by seeking to

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<sup>32</sup> See *Te-Moak Tribe of W. Shoshone of Nev. v. U.S. Dep't of Interior*, 608 F.3d 592, 609 (9th Cir. 2010) (citations omitted). Historic resources include buildings and other structures, as well as archeological and culturally significant sites, objects, urban districts and natural landscapes. See JULIA H. MILLER, A LAYPERSON'S GUIDE TO HISTORIC PRESERVATION LAW 1 (2005). Historic resources include those places and objects noteworthy for national or local reasons, as well as those known for specific people or events. The National Register of Historic Places, a federal listing of historic resources—although by no means an exhaustive list of historic resources—is discussed *infra* at Section I.D.

<sup>33</sup> However, slowing new development often *is* an objective of historic preservation. See Jess R. Phelps, *Moving Beyond Preservation Paralysis? Evaluating Post-Regulatory Alternatives for Twenty-First Century Preservation*, 37 VT. L. REV. 113, 136 (2012).

<sup>34</sup> Additional objectives include preserving architectural treasures for aesthetic and cultural reasons and using preservation to foster a “sense of place.” See Carol M. Rose, *Preservation and Community: New Direction in the Law of Historic Preservation*, 33 STAN. L. REV. 473, 480 (1981); see also MacGill, *supra* note 22, at 703–05 (describing the legislative climate leading up to the passage of modern federal historic preservation law).

protect connections to the United States' beginnings, to important moments and individuals in its history, and to cultures pre-dating the nation's founding.<sup>35</sup> Communities rightly take pride in the preservation and display of their historic resources exemplifying patriotism and achievement.

## 2. *Community Building*

Community building is a second important motivator of historic preservation. The preservation of historic buildings, areas, and places is quite often the most meaningful and lasting physical representation of collective cultural memories, especially in communities that are minority, disenfranchised, or under-represented in other ways.<sup>36</sup>

## 3. *Economic Development*

Preserved and restored historic resources can be a competitive advantage for cities and towns and rural areas alike.<sup>37</sup> Examples abound of towns and cities using historic preservation as a strategy

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<sup>35</sup> Rose, *supra* note 34, at 479; *see also* Robert Stipe, *Why Preserve Historic Resources?*, in READINGS IN HISTORIC PRESERVATION: WHY? WHAT? HOW? 59 (Norman Williams, Jr. et al. eds., 1983) (discussing how patriotism influences historic preservation). The origins of formal historic preservation policy decisions in the United States date back to the sale of George Washington's Mount Vernon estate in the mid-1800s (Congress was offered the opportunity to buy the estate, declined, and ultimately the estate was sold to a non-profit preservation society called the Mount Vernon Ladies' Association). *See* MacGill, *supra* note 22, at 703. A second important milestone in the history of historic preservation law in the United States involves the battlefield at Gettysburg. *See* United States v. Gettysburg Elec. Ry. Co., 160 U.S. 668 (1896) (upholding the federal government's use of eminent domain to take property for the preservation and study of the battle of Gettysburg and setting forth an understanding of at least some of the objectives of historic preservation). This author's experience of having lived for several years in Gettysburg can confirm that the economic development benefits of historic preservation, discussed *infra* at Subsection I.A.3, have undoubtedly followed.

<sup>36</sup> Rose, *supra* note 34, at 491; *see also* Melinda J. Milligan, *Buildings as History: The Place of Collective Memory in the Study of Historic Preservation*, 30 SYMBOLIC INTERACTION 105 (2007).

<sup>37</sup> Economic benefits of historic preservation were at least one objective of federal historic preservation laws. *See* 16 U.S.C. § 470(b)(6) (2006) (“[T]he increased knowledge of our historic resources, the establishment of better means of identifying and administering them, and the encouragement of their preservation . . . will assist economic growth and development . . .”) (emphasis added); J. Peter Byrne, *Historic Preservation and Its Cultured Despisers: Reflections on the Contemporary Role of Preservation Law in Urban Development*, 19 GEO. MASON. L. REV. 665 (2012).

in developing local economic activity.<sup>38</sup> Tourists delight in exploring unique historic places in other towns and cities.<sup>39</sup> Communities that protect and highlight their heritage can attract tourist revenue as well as benefit from the development of support industries.<sup>40</sup>

#### 4. *Environmental Benefits*

Finally, historic preservation has become increasingly associated with efforts to “green” the built environment. Preserving existing structures avoids destroying the “embodied

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<sup>38</sup> See David Listokin et al., *The Contributions of Historic Preservation to Housing and Economic Development*, 9 HOUSING POL’Y DEBATE 431, 443 (1998); see also RANDALL MASON, *ECONOMICS AND HISTORIC PRESERVATION: A GUIDE AND REVIEW OF THE LITERATURE*, BROOKINGS INSTITUTION METROPOLITAN POL’Y PROGRAM (2005) (surveying economic and policy literature examining the economic benefits of historic preservation); ECONOMIC BENEFITS OF HISTORIC PRESERVATION ACTIVITIES IN PENNSYLVANIA 30–34 (2011) (summarizing individual towns’ and cities’ experiences with historic preservation as an economic development strategy in Pennsylvania); John I. Gilderbloom et al., *Historic Preservation’s Impact on Job Creation, Property Values, and Environmental Sustainability*, 2 J. URBANISM 83 (2009) (describing historic preservation efforts in Louisville, Kentucky); Alison Kootstra, *Historic Preservation: Washington, D.C. Neighborhoods and Economic Change*, 10 EXPLORATIONS 42 (2007) (providing analysis of the effects of economic development in Washington, D.C.); Alexander J. Reichl, *Historic Preservation and Progrowth Politics in U.S. Cities*, 32 URB. AFF. REV. 513 (1997) (describing historic preservation and economic development in New York City, Atlanta, and New Orleans).

<sup>39</sup> See ARKANSAS HISTORIC PRESERVATION PROGRAM, *ECONOMIC BENEFITS OF HISTORIC PRESERVATION* 53–54 (2006) (describing the popularity of heritage travel) (citations omitted); N.J. HERITAGE TOURISM TASK FORCE, N.J. HISTORIC TRUST, *LINKING OUR LEGACY TO A NEW VISION: A HERITAGE TOURISM PLAN FOR NEW JERSEY 1* (June 2010) (reporting that 78 percent of leisure travelers in the United States participate in cultural or heritage activities while traveling and summarizing tourism interest in historic and heritage sites more generally) (citations omitted); Cheryl M. Hargrove, *Heritage Tourism*, 1 CULTURAL RES. MGMT. 10 (2002) (“Visiting historic and cultural sites is one of the most popular tourist activities today.”); see also Alan A. Lew, *Authenticity and Sense of Place in the Tourism Development Experience of Older Retail Districts*, 27 J. TRAVEL RES. 15, 18–19 (1989) (discussing place-based historic preservation efforts as especially important in retail districts); Patricia Mooney-Melvin, *Harnessing the Romance of the Past: Preservation, Tourism, and History*, 13 PUB. HISTORIAN 35, 36 (1991) (noting surveys that indicate historic sites rank highly among potential destinations for tourists).

<sup>40</sup> See Mooney-Melvin, *supra* note 39, at 40–42. For an example of one city that has benefitted greatly from a historic preservation-based tourism strategy see, for example, Rich Harrill & Thomas D. Potts, *Tourism Planning in Historic Districts: Attitudes Toward Tourism Development in Charleston*, 69 J. AM. PLANNING ASS’N 233, *passim* (2003) (describing the benefits in Charleston, South Carolina of tourism-based historic preservation strategies).

energy” of existing buildings,<sup>41</sup> prevents the demolition and waste of existing construction materials,<sup>42</sup> and capitalizes on traditional energy-efficient building materials and techniques.<sup>43</sup> Preservation also takes advantage of historic structures often being located in existing urban, walkable areas and not in far-flung, sprawling, auto-dependent “greenfields.”<sup>44</sup> Moreover, historic preservation and the preservation of environmental integrity generally are often closely related.<sup>45</sup>

### B. Objectives of Renewable Energy Development

Utility-scale renewable energy generation and related transmission facilities almost universally lack linkages to historic places, people, or building patterns, and therefore seemingly do not necessarily advance the objectives of historic preservation.<sup>46</sup>

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<sup>41</sup> Embodied energy is the total of all energy necessary to construct an existing building (including the energy expended to create the building materials), which is lost when a building is destroyed rather than preserved. See Mike Jackson, *Embodied Energy and Historic Preservation: A Needed Reassessment*, 36 ASS’N FOR PRESERVATION TECH. INT’L. 47 (2005) (arguing that the environmental benefits of existing buildings are overly discounted in considering the environmental performance of buildings and quantifying the benefits of preserving a building’s embodied energy).

<sup>42</sup> See *id.*; PRESERVATION GREEN LAB, NAT’L TRUST FOR HISTORIC PRESERVATION, *THE GREENEST BUILDING: QUANTIFYING THE ENVIRONMENTAL VALUE OF BUILDING REUSE* 84 (2011).

<sup>43</sup> See Akubue Jideofor Anselm, *Building with Nature (Ecological Principles in Building Design)*, 6 J. APPLIED SCI. 958, 959, 963 (2006) (arguing that traditional building methods and styles are often environmentally superior and frequently should be revived because traditional methods account for local environmental issues, use local materials, and avoid wasting resources); see also Sarah Elizabeth Welniak, *Energy Efficiency in Historic Structures*, 2–3 (May 2009) (unpublished M.S. thesis, Clemson University) (describing traditional building practices in residential structures in coastal South Carolina as being highly efficient for energy conservation purposes).

<sup>44</sup> See Patrice Frey, *Making the Case: Historic Preservation as Sustainable Development* 10 (Oct. 15, 2007) (draft white paper).

<sup>45</sup> The National Environmental Policy Act and its implementing regulations lists historic and cultural resources among the factors federal agencies are required to consider in performing environmental impact statements and environmental assessments. See 40 C.F.R. § 1508.27(b)(3), (8) (2013); see also MILLER, *supra* note 32, at 6; Kuntz, *supra* note 6, at 328–31.

<sup>46</sup> See Wiseman et al., *supra* note 19, at 829. Hydropower is a renewable source with a very long history. See Oliver Paish, *Small Hydro Power: Technology and Current Status*, 6 RENEWABLE & SUSTAINABLE ENERGY REV. 537, 538–39 (2002). However, hydropower is outside the scope of this paper, despite its role as the leading source of renewable energy and despite possible conflicts with preservation statutes. See generally Dan Tarlock, *Hydro Law and the Future of Hydroelectric Power Generation in the United States*, 65 VAND. L.

Indeed, most renewable energy and transmission line projects fall squarely in the realm of projects that may adversely affect historic resources and that would likely benefit those historic resources by undergoing federal historic preservation review.

Yet the animating objectives of renewable energy development include protecting national security, promoting community justice (or environmental justice), reviving the domestic manufacturing sector (i.e., creating “green jobs”), and mitigating climate change.<sup>47</sup> Compare these objectives to those of historic preservation listed above: patriotism, community building, economic development, and environmentalism. There is considerable overlap; indeed, the two sets of objectives are strikingly parallel.

### 1. *National Security*

Renewable energy sources are widely viewed as a means for decreasing domestic dependence on foreign fuel sources, particularly imported oil.<sup>48</sup> Producing “homegrown” renewable energy is an ostensibly patriotic act and one that arguably makes

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REV. 1723 (2012) (discussing the history of hydropower development in the United States and possible conflicts with conservation laws). Small wind also has a long history. See Erica Schroeder, *Turning Offshore Wind On*, 98 CALIF. L. REV. 1631, 1634–35 (2010). It is not considered in this paper alongside utility-scale wind projects, however, for the simple reason that large new turbines are not modern echoes of historic turbines but instead have vastly greater landscape impacts. See ROBERT W. RIGHTER, *WIND ENERGY IN AMERICA: A HISTORY* (1996) (describing the long, slow, and unsteady development of wind as a power source in the United States). But see Christopher J. Castaneda, *History Beneath the Surface: Natural Gas Pipelines and the National Historic Preservation Act*, 26 PUB. HISTORIAN 105, 107 (2004) (arguing that even though energy infrastructure is modern, it can nonetheless be historically significant).

<sup>47</sup> See Patricia E. Salkin & Ashira Pelman Ostrow, *Cooperative Federalism and Wind: A New Framework for Achieving Sustainability*, 37 HOFSTRA L. REV. 1049, 1056–61 (2009); Wiseman et al., *supra* note 19, at 833–42 (setting forth broad policy arguments for developing renewable energy sources); Hannah Wiseman, *Expanding Regional Renewable Governance*, 35 HARV. ENVT'L. L. REV. 477, 487–93 (2011); see also *Electric Transmission Lines: Hearing Before the S. Comm. On Energy & Natural Resources*, 111th Cong. 10 (2009) (statement of Jon Wellinghoff, Acting Chairman, FERC); Gregory J. Rigano, Note, *The Solution to the United States' Energy Troubles is Blowing in the Wind*, 39 Hofstra L. Rev. 201, 204–217 (2011) (identifying environmental rationales for developing renewable energy sources).

<sup>48</sup> See Joshua P. Fershee, *Changing Resources, Changing Market: The Impact of a National Renewable Portfolio Standard on the U.S. Energy Industry*, 29 ENERGY L.J. 49, 57 (2008); Benjamin K. Sovacool & Christopher Cooper, *Congress Got It Wrong: The Case for a National Renewable Portfolio Standard and Implications for Policy*, 3 ENVTL. & ENERGY L. & POL'Y J. 85, 89 (2008).

Americans safer from foreign threats by reducing their dependence on energy sources derived from politically unstable or hostile nations.<sup>49</sup>

## 2. *Community Justice*

Clean energy sources are generally seen as promoting environmental justice insofar as these sources avoid the noxious local effects of conventional power plants,<sup>50</sup> which often disproportionately affect minorities and low-income communities.<sup>51</sup> Solar, wind, and geothermal plants simply do not have the negative pollution effects that fossil fuel and nuclear power sources produce.<sup>52</sup> Instead, renewable energy can be a solution to environmental justice concerns, especially in native communities.<sup>53</sup>

## 3. *Economic Development*

Renewable energy advocates hope to stimulate the domestic manufacturing sector to produce components for wind and solar generation capacity.<sup>54</sup> This objective is aimed at addressing

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<sup>49</sup> Clifford Krauss & Eric Lipton, *U.S. Inches Toward Goal of Energy Independence*, N.Y. TIMES, Mar. 23, 2012, <http://www.nytimes.com/2012/03/23/business/energy-environment/inching-toward-energy-independence-in-america.html>.

<sup>50</sup> Sovacool, *supra* note 11, at 1.

<sup>51</sup> See NAT'L COMM'N ON ENERGY POLICY, SITING CRITICAL ENERGY INFRASTRUCTURE: AN OVERVIEW OF NEEDS AND CHALLENGES 9 (2006) (listing local concerns with energy facilities). See generally, KENNETH A. MANASTER, ENVIRONMENTAL PROTECTION AND JUSTICE: READINGS OF THE PRACTICE AND PURPOSES OF ENVIRONMENTAL LAW 201–326 (3d. ed. 2007) (addressing siting of polluting facilities in depth); Vicki Been, *What's Fairness Got To Do With It? Environmental Justice and the Siting of Locally Undesirable Land Uses*, 78 CORNELL L. REV. 1001 (1993); Richard J. Lazarus, *Pursuing "Environmental Justice": The Distributional Effects of Environmental Protection*, 87 NW. U. L. REV. 787 (1993) (discussing environmental justice concerns).

<sup>52</sup> See Uma Outka, *Siting Renewable Energy: Land Use and Regulatory Context* 37 ECOLOGY L.Q. 1041, 1076 (2010) (describing the environmental justice benefits of solar power).

<sup>53</sup> See Ryan David Dreveskracht, *Native Nation Economic Development via the Implementation of Solar Projects: How to Make It Work*, 68 WASH. & LEE L. REV. 27, 48–81 (2011); Elizabeth Ann Kronk, *Alternative Energy Development in Indian Country: Lighting the Way for the Seventh Generation*, 46 IDAHO L. REV. 449, 455–58 (2010); Uma Outka, *Environmental Justice in the Renewable Energy Transition*, 19 J. ENVTL. & SUSTAINABILITY L. 60, *passim* (2012).

<sup>54</sup> See Dorceta E. Taylor, *Green Jobs and the Potential to Diversify the Environmental Workforce*, 31 UTAH ENVTL. L. REV. 47, 69–70, 75–77 (2011); see also Glennon & Reeves, *supra* note 12, at 93–94; Salkin & Ostrow, *supra* note

concerns about America's competitiveness in an increasingly global economy.<sup>55</sup>

#### 4. *Environmental Benefits*

Finally, the environmental benefits of renewable energy are well documented.<sup>56</sup> Renewable energy sources are widely viewed as a crucial solution to global climate change.<sup>57</sup>

#### C. *Barriers to Renewable Energy Development*

Despite many important supporting objectives, renewable energy generation and transmission developments face numerous barriers.<sup>58</sup> Barriers to utility-scale generation of solar and wind include high, upfront capital costs, unproven technologies, intermittent sources or inadequate energy storage technologies, overlapping and uncertain regulatory agency jurisdiction, and NIMBYism.<sup>59</sup> Competition with fossil fuels, the continued

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47, at 1058–60 (describing jobs and economic benefits of widespread renewable energy adoption).

<sup>55</sup> See AMERICAN WIND ENERGY ASS'N & SOLAR ENERGY INDUS. ASS'N, *supra* note 25, at 6; Sheryl Gay Stolberg, *Obama Calls for Bipartisan Effort to Fight for U.S. Jobs*, N.Y. TIMES, Jan. 26, 2011, <http://www.nytimes.com/2011/01/26/us/politics/26speech.html> (describing President Obama's objectives for increasing domestic clean energy development).

<sup>56</sup> See Wiseman et al., *supra* note 19, at 888–92 (describing the environmental benefits of renewable sources as avoiding the numerous environmental ills created by fossil fuel and nuclear sources); Rigano, *supra* note 47, at 204–16; see also Schroeder, *supra* note 46, at 1638–40. Renewable sources are not without their own environmental problems, even if such sources do avoid emissions that cause local and global air pollution. MASSACHUSETTS INSTITUTE OF TECHNOLOGY, *supra* note 14, at 8-3 to 8-17 (describing adverse environmental effects of geothermal projects such as water use, noise pollution, and some gaseous emissions); See Glennon & Reeves, *supra* note 12, at 96–105 (describing adverse environmental effects of utility-scale solar projects); Rigano, *supra* note 47, at 1640–41 (describing adverse effects of wind projects).

<sup>57</sup> See, e.g., Timothy P. Duane, *Greening the Grid: Implementing Climate Change Policy Through Energy Efficiency, Renewable Portfolio Standards, and Strategic Transmission System Investments*, 34 VT. L. REV. 711 (2010); Thomas D. Peterson et al., *Developing a Comprehensive Approach to Climate Change Policy in the United States that Fully Integrates Levels of Government and Economic Sectors*, 26 VA. ENVTL. L.J. 227 (2008); Daniel Van Fleet, *Legal Approaches to Promote Technological Solutions to Climate Change*, 2008 DUKE L. & TECH. REV. 8 (2008).

<sup>58</sup> YANG, *supra* note 13, at 10 (describing barriers to transmission development); Outka, *supra* note 30, at 1690–99 (describing barriers to renewable energy development).

<sup>59</sup> See DAVID J. HURLBUT ET AL., NAT'L RENEWABLE ENERGY LAB., *BEYOND RENEWABLE PORTFOLIO STANDARDS: AN ASSESSMENT OF REGIONAL SUPPLY AND*

externalization of the costs of fossil fuel-driven energy production, and subsidies for fossil fuels are further, significant barriers to renewable energy development.<sup>60</sup> Finding sites and obtaining land use permits for large, utility-scale renewable energy projects present still more obstacles.<sup>61</sup>

Transmission constraints are also a major barrier to the development of utility-scale renewable energy resources, particularly solar and wind resources.<sup>62</sup> Many of the richest solar and wind resources are found in remote locations—for example, the Mojave Desert, the High Plains, and offshore—where at present transmission infrastructure is inadequate or nonexistent.<sup>63</sup> Without a transmission network stretching to load centers from remote resource areas, the development of remote resource areas for renewable energy production is generally not worthwhile.<sup>64</sup>

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DEMAND CONDITIONS AFFECTING THE FUTURE OF RENEWABLE ENERGY IN THE WEST (2013); DEP'T OF ENERGY, 20% WIND ENERGY BY 2030: INCREASING WIND ENERGY'S CONTRIBUTION TO U.S. ELECTRICITY SUPPLY 72–73 (2008) (describing materials, manufacturing, and labor challenges in developing wind resources); YANG, *supra* note 13, at 8–14; Glennon & Reeves, *supra* note 12, at 105–111 (describing economic challenges confronting utility-scale solar development); Lorde Martin, *supra* note 20 (describing NIMBY opposition to wind farms); Outka, *supra* note 30, at 1690 (describing cost barriers); Salkin & Ostrow, *supra* note 47, at 1049, 1065–70, 1076–79 (describing barriers to wind development such as storage and intermittancy); Wiseman et al., *supra* note 19, at 830–32 (describing barriers to utility-scale renewable energy such as complex and competing regulatory regimes).

<sup>60</sup> Outka, *supra* note 30, at 1704 (noting that many laws aimed at protecting the environment have significant “carve-outs” for fossil fuels and that renewable sources do not enjoy such benefits under the law).

<sup>61</sup> Sara C. Bronin, *Building-Related Renewable Energy and the Case of 360 State Street*, 65 VAND. L. REV. 1875, 1883 (2012); see also Glennon & Reeves, *supra* note 12 at 104.

<sup>62</sup> See DEP'T OF ENERGY, *supra* note 59, at 98–100 (describing barriers to transmission investment such as cost allocation, capacity planning, cost recovery and siting); YANG, *supra* note 13, at 10; Klass & Wilson, *supra* note 17, at 1804; Matthew L. Wald, *Wind Energy Bumps into Power Grid's Limits*, N.Y. TIMES, Aug. 27, 2008, at A1 (noting that the reason some prime sites for renewable sources have not yet been developed is inability to move power to markets from those remote sites).

<sup>63</sup> See AM. WIND ENERGY ASS'N & SOLAR ENERGY INDUS. ASS'N, *supra* note 25, at 5 (describing the remoteness of wind resources); Glennon & Reeves, *supra* note 12, at 94 (describing prime solar sites as often being far from urban areas). Moreover, unlike coal, natural gas, oil, and nuclear energy, all of which can be transported via truck, train, or barge, wind and solar fuel sources must be converted to electricity where captured. Klass & Wilson, *supra* note 17, at 1811. In this way, transmission is much more essential to renewable energy sources than it is to many conventional sources.

<sup>64</sup> See Wiseman et al., *supra* note 19, at 853–54 (noting that renewable

New transmission lines are costly and difficult to build in some places.<sup>65</sup>

“Congestion” is arguably the foremost barrier for electrical transmission.<sup>66</sup> Transmission is the movement of high voltages of electricity across large distances,<sup>67</sup> and congestion is a shortage of transmission capacity resulting from of a geographic imbalance of supply and demand.<sup>68</sup> In areas with high demand (e.g., urban areas along the coasts), construction of new generation sources is often difficult for environmental and cost reasons, so transmission is necessary to move electricity to the high demand areas from faraway sources.<sup>69</sup> However, in many energy markets today,

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energy projects must be able to connect generation to transmission to be of value); see also Uma Outka, *The Renewable Energy Footprint*, 30 STAN. ENV'T L. J. 241, 249–50 (2011) (“[I]t is widely perceived that a large increase in renewable energy sources will require more transmission infrastructure than historically may have been necessary for fossil fuel source[s] of electricity . . . .”) (citations omitted); Wald, *supra* note 62.

<sup>65</sup> See Wald, *supra* note 62 (noting that New York state has not built a new transmission line in nearly twenty years, with the exception of underwater connections to Long Island); see also Meyer & Sedano, *supra* note 30, at E-6.

<sup>66</sup> See YANG, *supra* note 13, at 9–10 (using the term “bottlenecks” to describe congestion); John Noor, *Herding Cats: What To Do When States Get in the Way of National Energy Policy*, 11 N.C. J.L. & TECH. 145, 146 (2009) (citations omitted). Congestion in transmission networks led to brownouts in 2003, prompting Congress to pass the Energy Policy Act of 2005, which included provisions aimed at reducing congestion problems. See Klass & Wilson, *supra* note 17, at 1817; see also Miriam Sowinski, *Practical, Legal, and Economic Barriers to Optimization in Energy Transmission and Distribution*, 26 J. LAND USE 503, 520 (2011) (describing problems of intermittency related to transmission of renewable sources such as wind and solar power).

<sup>67</sup> Sowinski, *supra* note 66, at 505 (defining transmission as being the near speed-of-light transfer of electricity over long-distance, highly conductive lines with voltages between 138 and 765kV, which minimize the amount of electricity lost as heat or other energy (so-called “line loss”)); see also Williams, *supra* note 26, at 566–72 (providing a thorough overview of the physical structure of the transmission network).

<sup>68</sup> See DAVID MEYER, OFF. OF ELEC. DELIVERY & ENERGY RELIABILITY, U.S. DEP'T. OF ENERGY, 2012 NATIONAL ELECTRIC TRANSMISSION CONGESTION STUDY: PRELIMINARY FINDINGS 5 (2012), <http://energy.gov/oe/services/electricity-policy-coordination-and-implementation/transmission-planning/2012-national>.

<sup>69</sup> See Meyer & Sedano, *supra* note 30, at E-17 (noting that load centers tend to be heavily urbanized with air quality problems and lack of water supplies needed for new (conventional) sources). Texas is a prominent example of the geographic dichotomy between locations suitable for generation and locations with high demand for energy. (This dichotomy creates the need for new transmission lines.) The Texas Public Utility Commission has identified several areas in the sparsely developed northern and western parts of the state where wind energy is particularly profitable. The Public Utility Commission is

transmission capacity is inadequate, and new lines are needed.<sup>70</sup> Inadequate transmission capacity leads to high retail energy prices at best, and blackouts at worst.<sup>71</sup> Transmission congestion also creates pricing anomalies and grid instabilities.<sup>72</sup> Relieving transmission congestion problems is complicated by overlapping jurisdictions controlling the approval of transmission line siting among the states and between individual states and the federal government,<sup>73</sup> cost allocation among the beneficiaries of additional transmission capacity,<sup>74</sup> and, perhaps most significantly,

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proposing to build several new transmission lines to the eastern part of the state where the primary urban centers demand the electricity that the wind turbines can generate. See Pub. Util. Comm'n of Tex., *Program Overview*, CREZ TRANSMISSION PROGRAM INFO. CENTER, <http://www.texascrezprojects.com/overview.aspx> (last visited Feb. 20, 2013); see also Kathryn B. Daniel, *Winds of Change: Competitive Renewable Energy Zones and the Emerging Regulatory Structure of Texas Wind Energy*, 42 TEX. TECH L. REV. 157, 166 (2009); Kaitlyn Luck, *They Call It the Hill Country, I Call It Home: Issues in Siting Wind Energy Transmission Lines in Texas*, 14 TEX. TECH. ADMIN. L.J. 247 (2012).

<sup>70</sup> See Klass & Wilson, *supra* note 17, at 1811–12 (noting that new wind energy development will require new transmission investments of up to \$200 billion); see also AM. WIND ENERGY ASS'N & SOLAR ENERGY INDUS. ASS'N, *supra* note 25, at 6; YANG, *supra* note 13 (describing problems in the transmission grid such as underinvestment, balkanized ownership, fragmented regulatory regimes, NIMBYism, and reliability focused siting requirements); Steven J. Eagle, *Securing a Reliable Electricity Grid: A New Era in Transmission Siting Regulation*, 73 TENN. L. REV. 1 (2005) (describing many reasons why transmission capacity is lacking); Luck, *supra* note 69, at 247 (describing idled wind turbines deliberately prevented from generating because of a shortage of transmission capacity connecting to demand centers).

<sup>71</sup> Wald, *supra* note 62 (“Achieving [twenty percent of energy use from wind] would require moving large amounts of power over long distances, from the windy, lightly populated plains in the middle of the country to the coasts where many people live. Builders are also contemplating immense solar-power stations in the nation’s deserts that would pose the same transmission problems.”); see also YANG, *supra* note 13, at 18; Eagle, *supra* note 70, at 17 n.77.

<sup>72</sup> Peter Fox-Penner, *Easing Gridlock on the Grid: Electricity Planning and Siting Compacts*, ELECTRICITY J. 11, 12 (Nov. 2001).

<sup>73</sup> See Sowinski, *supra* note 66, at 514 (describing the relationship between federal and state regulators of transmission lines); see also Meyer & Sedano, *supra* note 30 at E-3 to E-8 (describing obstacles in the transmission line siting process). See generally EDISON ELEC. INST., STATE GENERATION & TRANSMISSION SITING DIRECTORY (2012) (summarizing transmission siting requirements for each of the fifty states and illustrating the disparate jurisdictional regulatory regimes from state to state); Moran, *supra* note 7 (describing the relationship between state and local regulators).

<sup>74</sup> See AM. WIND ENERGY ASS'N & SOLAR ENERGY INDUS. ASS'N, *supra* note 25, at 16; Ashley C. Brown & Damon Daniels, *Vision Without Site; Site Without Vision*, 16 ELECTRICITY J. 23, 25, 27 (2003) (describing “parochialism” concerns whereby state regulators considering transmission siting proposals are either

NIMBYism.<sup>75</sup>

Some of the obstacles to exploiting America's rich wind and solar resources are unrelated to the built environment and therefore largely unrelated to historic preservation.<sup>76</sup> However, those obstacles that are related to land use conflict with historic resources can be minimized or avoided through thoughtful planning and coordination with existing federal preservation laws.

#### D. *Federal Historic Preservation Law*

The goals of historic preservation are reflected in the National Historic Preservation Act (NHPA).<sup>77</sup> NHPA seeks to preserve historic resources.<sup>78</sup> NHPA sets forth the primary federal historic preservation framework for studying the effects of federal undertakings such as large infrastructure projects, which include energy development and transmission projects.<sup>79</sup> Significantly,

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barred by statute or unwilling to consider the benefits to other jurisdictions of transmission proposals).

<sup>75</sup> See Brown & Daniels, *supra* note 74, at 26 (mentioning barriers to transmission siting arising from landowner opposition); Eagle, *supra* note 70, at 32 ("The magnitude of the NIMBY problem has increased in recent years with the de-crease in available land, the growing necessity of infrastructure close to existing populations, and the level and organization of local opposition . . ."). Concerns regarding NIMBY challenges to transmission siting are implicit in FERC Commissioner Jon Wellinghoff's testimony to the Senate in 2009; *Electric Transmission Lines: Hearing Before the S. Comm. On Energy & Natural Resources*, 111th Cong. 10 (2009) (statement of Jon Wellinghoff, Acting Chairman, FERC). Commissioner Wellinghoff focused his testimony primarily as a request to Congress to give FERC the authority to override state and local government siting decisions and addressed cost allocation and reliability only as secondary matters. See *id.*

<sup>76</sup> For example, the cost allocation issue in financing transmission line construction is unrelated to historic preservation. See Sowinski, *supra* note 66, at 521–26 (describing problems stemming from allocating construction costs of new transmission lines as endemic to the regulatory structure governing transmission monopolies).

<sup>77</sup> National Historic Preservation Act, 16 U.S.C. § 470 (2012).

<sup>78</sup> See *id.* § 470(b)(2) ("[T]he historical and cultural foundations of the Nation should be preserved as a living part of our community life and development in order to give a sense of orientation to the American people . . ."); *id.* § 470-1 ("It shall be the policy of the Federal Government, in cooperation with other nations and in partnership with the States, local governments, Indian tribes, and private organizations and individuals to . . . administer federally owned, administered, or controlled prehistoric and historic resources in a spirit of stewardship for the inspiration and benefit of present and future generations . . . [and] encourage the public and private preservation and utilization of all usable elements of the Nation's historic built environment . . .").

<sup>79</sup> See S. Rheagan Alexander, *Tribal Consultation for Large-Scale Projects:*

however, the law does not dictate any substantive outcomes;<sup>80</sup> that is, NHPA does not, on its own, require any agency to deny a project on its merits for the purposes of historic preservation.<sup>81</sup> Rather, NHPA imposes procedural requirements on any federal agency action likely to affect a historic resource.<sup>82</sup> The procedures require information gathering, analysis, and consultation with parties interested in or affected by the agency's decision.<sup>83</sup>

### 1. *The Scope of NHPA's Jurisdiction*

The threshold issue under NHPA for renewable energy and transmission projects is whether NHPA even applies.<sup>84</sup> In general, a federal agency is obligated to follow NHPA's procedural requirements when it engages in an "undertaking," broadly defined to mean any

project, activity, or program funded in whole or in part under

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*The National Historic Preservation Act and Regulatory Review*, 32 PACE L. REV. 895, 896 (2012) (describing NHPA as the central piece of federal legislation regarding historic review of buildings and infrastructure and energy development).

<sup>80</sup> See *Nat'l Trust for Historic Pres. v. Blanck*, 938 F. Supp. 908, 919 (D.D.C. 1996) ("[NHPA] require[s] the government to conduct certain procedural and informational activities before embarking on projects that might affect, respectively, historic sites or the environment. *Neither [the National Environmental Policy Act] nor Section 106 mandates a particular outcome of governmental decisions; rather each defines the processes by which those decisions must be made.*") (emphasis added).

<sup>81</sup> See *Wilderness Watch v. Iwamoto*, 853 F. Supp. 2d 1063, 1071 (W.D. Wash. 2012) (ruling that NHPA does not create substantive preservationist obligations with regard to any specific projects); see also *Lee v. Thornburgh*, 877 F.2d 1053, 1058 (D.C. Cir. 1989) ("The National Historic Preservation Act is a narrow statute. Its main thrust is to encourage preservation of historic sites and buildings rather than to mandate it.").

<sup>82</sup> *Thornburgh*, 877 F.2d at 1055. Those procedures are set forth at 36 C.F.R. § 800 and are described in more detail in Section I.D.2, *infra*. See MacGill, *supra* note 22, at 706 (describing the limitations of NHPA's current requirements and its relative shortcomings in protecting historic assets). In addition to the lack of any substantive obligations to protect historic resources, agencies are not even obligated, as under the National Environmental Policy Act, to consider alternative courses of action that would protect such resources. Moreover, NHPA's federal gatekeeper, the Advisory Council on Historic Preservation, is also relatively toothless to impose any substantive preservationist measures. See *id.* at 706–07.

<sup>83</sup> See MILLER, *supra* note 32, at 4–5; see also SARA C. BRONIN & J. PETER BYRNE, *HISTORIC PRESERVATION LAW* 144–51 (2012); Donald Dworsky et al., *An Overview of Federal Preservation Law*, in *A HANDBOOK ON HISTORIC PRESERVATION LAW* 193, 194 (Christopher J. Duerksen ed., 1983).

<sup>84</sup> See MacGill, *supra* note 22, at 713–15 (discussing the threshold NHPA inquiry of what constitutes a "federal undertaking" generally).

the direct or indirect jurisdiction of a Federal agency, including—(A) those carried out by or on behalf of the agency; (B) those carried out with Federal financial assistance; (C) those requiring a Federal permit, license or approval; and (D) those subject to State or local regulation administered pursuant to a delegation or approval by a federal agency.<sup>85</sup>

Determining when an “undertaking” occurs has itself been the subject of much dispute and litigation.<sup>86</sup> In the context of infrastructure project development, NHPA is often relevant because such projects often require either a federal subsidy or federal agency approval, or both.<sup>87</sup> The federal subsidy or approval constitutes the “undertaking” under NHPA and triggers the NHPA process. It is important to note, however, that not all renewable energy and transmission projects will trigger NHPA. NHPA does not apply when there is no federal involvement or no federal agency discretion in the commitment of federal funds.<sup>88</sup>

## 2. *A Roadmap of NHPA’s Procedural Requirements*

NHPA imposes procedural requirements primarily, and the “centerpiece” of the procedures to protect historic resources is

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<sup>85</sup> 16 U.S.C. § 470w (2012); *see also* Sugarloaf Citizens Ass’n v. Fed. Energy Regulatory Comm’n, 959 F.2d 508 (4th Cir. 1992) (construing the meaning of “undertaking” under NHPA and setting forth when NHPA review is required).

<sup>86</sup> *See, e.g.,* Nat’l Mining Ass’n v. Fowler, 324 F.3d 752, 759 (D.C. Cir. 2003) (holding that NHPA “applies by its terms only to *federally funded or federally licensed* undertakings”) (quoting Sheridan Kalorama Historical Ass’n v. Christopher, 49 F.3d 750, 755 (D.C. Cir. 1995)); *see also* Bus. & Residents Alliance of E. Harlem v. Jackson, 430 F.3d 584, 586 (2d Cir. 2005) (holding that a non-federal expenditure of block grant funds is not an undertaking under NHPA and therefore not subject to NHPA’s procedural requirements); *Sheridan Kalorama*, 49 F.3d at 754 (holding that the Secretary of State’s inaction with regard to the renovation of a foreign embassy under the Foreign Missions Act was not an undertaking for the purpose of NHPA); MacGill, *supra* note 22, at 714 n.109 (collecting cases construing the meaning of “undertaking”).

<sup>87</sup> *See, e.g.,* Alexander, *supra* note 79. Section II, *infra*, contains a detailed analysis of when transmission projects constitute an undertaking necessitating NHPA review.

<sup>88</sup> *See, e.g.,* Liberty Square Realty Corp. v. Boricua Vill. Hous. Dev. Fund Co., No. 12 CV 1395(HB), 2012 WL 3191963, at \*2 (S.D.N.Y. Aug. 7, 2012) (ruling that no violation of NHPA can occur without, at a minimum, federal involvement); *see also* *E. Harlem*, 430 F.3d at 594 (holding that where an agency does not have discretion to consider the use of federal funds NHPA is not triggered); *Sugarloaf Citizens Ass’n*, 959 F.2d at 515 (holding that a mere “ministerial act” on the part of the federal agency is not an undertaking and does not subject a project to NHPA review).

NHPA's Section 106.<sup>89</sup> Section 106 is a "stop, look, and listen" provision that requires each federal agency to consider the effects of its programs on historic resources.<sup>90</sup> Section 106 mandates the above-described information-gathering and review process, which requires conducting studies, preparing reports on historic resources, consultation with certain stakeholders, and consideration of an agency program's impacts.<sup>91</sup> Thus, beyond the threshold jurisdictional issue of whether NHPA applies, two of NHPA's procedural requirements will also be relevant in conflicts involving historic preservation and renewable energy development.<sup>92</sup> First, under NHPA's Section 106, federal agencies must identify historic resources within the area potentially affected by the undertaking, consider the effects of their actions on those historic resources, and determine whether the effect of the undertaking will be adverse to the historic resources.<sup>93</sup> Second,

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<sup>89</sup> 16 U.S.C. § 470f; John M. Fowler, *The Federal Preservation Program*, in *A RICHER HERITAGE: HISTORIC PRESERVATION IN THE TWENTY-FIRST CENTURY* 45 (Robert E. Stipe ed., 2003).

<sup>90</sup> *E. Harlem*, 430 F.3d at 591. NHPA's requirements are procedural:

Under NHPA, a federal agency must make a reasonable and good faith effort to identify historic properties, 36 C.F.R. § 800.4(b); determine whether identified properties are eligible for listing on the National Register based on criteria in 36 C.F.R. § 60.4; assess the effects of the undertaking on any eligible historic properties found, 36 C.F.R. §§ 800.4(c), 800.5, 800.9(a); determine whether the effect will be adverse, 36 C.F.R. §§ 800.5(c), 800.9(b); and avoid or mitigate any adverse effects, 36 C.F.R. §§ 800.8(e), 800.9(c) . . . [and] confer with the State Historic Preservation Officer . . . and seek the approval of the Advisory Council on Historic Preservation . . . .

*Muckleshoot Indian Tribe v. U.S. Forest Serv.*, 177 F.3d 800, 805 (9th Cir. 1999).

<sup>91</sup> That is, NHPA does not impose any substantive standards upon federal agencies to protect historic resources from an agency action that might have adverse effects on the resource. See MacGill, *supra* note 22, at 700. NHPA generally lacks any prohibition against either destroying or adversely impacting historic resources, provided the appropriate review and consultations have been completed first. See *National Mining Ass'n. v. Fowler*, 324 F.3d 752, 755 (D.C. Cir. 2003); see also MacGill, *supra* note 22, at 705–06 (discussing drawbacks with Section 106, including its lack of substantive protections for historic resources and the limited role of the Advisory Council on Historic Preservation). Some commentators have speculated about substantive requirements imposed by NHPA's Section 110, but so far the courts have disagreed. See Suagee, *supra* note 3, at 55–56.

<sup>92</sup> For the best recent overview of federal historic preservation law (and the law of historic preservation generally), see BRONIN & BYRNE, *supra* note 83, at 57–73, 106–267.

<sup>93</sup> See 16 U.S.C. § 470f. "Section 106" refers to the provision of the session law through which NHPA was passed and is commonly used in literature and

federal agencies must solicit consultations with third parties, such as state and tribal leaders and non-governmental interest groups, when agency actions are likely to impact historic resources.<sup>94</sup> These two requirements are explained in greater detail below.

3. *Consideration of Effects and Designation for Listing in the National Register of Historic Places*

Section 106 requires federal agencies with indirect or direct jurisdiction over a proposed federally led, federally licensed, or federally assisted undertaking to take into account the effect of the undertaking on a district, site, building, structure, or object that is included in or eligible for inclusion in the National Register of Historic Places (NRHP).<sup>95</sup> Places listed in or eligible for listing in the NRHP are the focus of historic preservation and receive special attention under NHPA.<sup>96</sup> The NRHP and its criteria for eligibility are hugely important to the historic preservation process, serving as the basis for review under Section 106.<sup>97</sup> If no historic sites are

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case law discussing NHPA's requirements; *see, e.g.*, MacGill, *supra* note 22, at 699; Marilyn Ursu Bauriedel, *Federal Historic Preservation Law: Uneven Standards for Our Nation's Heritage*, 20 SANTA CLARA L. REV. 189, 199–200 (1980).

<sup>94</sup> *See* 36 C.F.R. § 800.3(c)–(f) (2011). The Advisory Council on Historic Preservation has the authority to promulgate regulations implementing Section 106, and has done so. 16 U.S.C. § 470s; 36 C.F.R. § 800. NHPA has reserved special consultation requirements for tribes. *See* Alexander, *supra* note 79, at 898–905.

<sup>95</sup> *See* 16 U.S.C. § 470a(a)(1)(A); *see also* *National Register of Historic Places*, NATIONAL PARK SERVICE, <http://www.nps.gov/nr/> (last visited Feb. 21, 2013).

<sup>96</sup> The criteria for evaluating a nomination to the NRHP are:

The quality of significance in American history, architecture, archeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association and (a) that are associated with events that have made a significant contribution to the broad patterns of our history; or (b) that are associated with the lives of persons significant in our past; or (c) that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or (d) that have yielded, or may be likely to yield, information important in prehistory or history.

36 C.F.R. § 60.4 (2011). The most important elements of this regulatory definition are “historical significance” and “integrity.” *See* BRONIN & BYRNE, *supra* note 83, at 61.

<sup>97</sup> *See* BRONIN & BYRNE, *supra* note 83, at 147–50. Indeed, the idea of

identified as impacted by the undertaking, then the agency must notify the State Historic Preservation Officer(s) (SHPO) of the state(s) where the undertaking is occurring, and if the SHPO concurs with the agency, the Section 106 process is complete. However, if the agency finds that a site (or sites) eligible for listing in the NRHP will be affected by the undertaking or if the SHPO disagrees with the agency, the federal agency must consider the effect of its undertaking on the site(s).<sup>98</sup>

#### 4. *NHPA's Consultation Requirements*

In addition to the impact review requirements of Section 106, NHPA imposes upon federal agencies the obligation to engage in “consultations” with different classes of stakeholders, including historical and archaeological associations,<sup>99</sup> the Advisory Council on Historic Preservation (ACHP),<sup>100</sup> SHPOs,<sup>101</sup> the public,<sup>102</sup> and tribes.<sup>103</sup> NHPA requires “coordination among Indian tribes, [SHPOs], and Federal agencies in historic preservation planning and in the identification, evaluation, protection, and interpretation of historic properties.”<sup>104</sup> Indian tribes enjoy a special consultation

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inventorying the nation's historic resources underpinned NHPA in the first place. See 16 U.S.C. § 461 (codifying the 1935 Historic Sites Act, which had authorized the National Park Service to conduct a survey of buildings and sites of historic significance for possible inclusion in the national park system).

<sup>98</sup> 16 U.S.C. § 470f; see MacGill, *supra* note 22, at 708–12 (describing in greater detail than presented here the steps involved in the Section 106 review process). The Advisory Council on Historic Preservation is a federal body with the authority to make regulations enacting NHPA and to advise other agencies on historic preservation, among other responsibilities. See 16 U.S.C. § 470j(a).

<sup>99</sup> 16 U.S.C. § 470a(a)(2); see *Mid States Coal. for Progress v. Surface Transp. Bd.*, 345 F.3d 520, 553 (8th Cir. 2003) (describing the consultation provisions of NHPA).

<sup>100</sup> 16 U.S.C. § 470a(a)(6). The ACHP is not obligated to consult with the lead federal agency. See 36 C.F.R. § 800.6(a)(1)(iii) (giving the ACHP discretion to participate). Compare *id.* § 800.6(b)(1) (“Resolution without the [ACHP]”) with § 800.6(b)(2) (“Resolution with [ACHP] Participation”).

<sup>101</sup> 16 U.S.C. § 470a(a)(6); see also 36 C.F.R. § 800.3(c).

<sup>102</sup> 16 U.S.C. § 470a(b)(1)(C); see also 36 C.F.R. § 800.3(e)–(f) (obligating the agency leading NHPA review to seek public input, notify the public, and identify other parties entitled to be consulted, inviting them to participate in the NHPA review process).

<sup>103</sup> 16 U.S.C. § 470a(d)(1)(A); see also Derek C. Haskew, *Federal Consultation with Indian Tribes: The Foundation of Enlightened Policy Decisions, or Another Badge of Shame?*, 24 AM. INDIAN L. REV. 21, 46–50 (1999) (summarizing NHPA cases involving consultations between federal agencies and Native American Tribes).

<sup>104</sup> 16 U.S.C. § 470a(d)(1)(A).

status under the NHPA regulations. Regulations implementing this broad coordination mandate require Federal agencies to “gather information from any Indian tribe . . . to assist in identifying properties, *including those located off tribal lands.*”<sup>105</sup> Furthermore, consultation with tribal communities must “commence early in the planning process, in order to identify and discuss relevant preservation issues.”<sup>106</sup> The regulations do not provide detailed requirements for the precise nature, timing, or forum for consultation other than that meetings with tribal leaders should occur on a “government-to-government” level.<sup>107</sup>

In general, whether involving tribes or state or local actors, consultation regarding the effects of federal undertakings on historic resources is at the heart of the NHPA process because NHPA is fundamentally an information-gathering statute.<sup>108</sup>

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<sup>105</sup> 36 C.F.R. § 800.4(a)(4) (emphasis added); *see e.g.*, Peter J. Gardner, *The First Amendment’s Unfulfilled Promise in Protecting Native American Sacred Sites: Is the National Historic Preservation Act a Better Alternative?*, 47 S.D. L. REV. 68 (2002) (describing the benefits and potential of NHPA in protecting Native American historic resources); Elizabeth G. Pianca, *Protecting American Indian Sacred Sites on Federal Lands*, 45 SANTA CLARA L. REV. 461, 480 (2005) (summarizing the relationship between NHPA and protection of Native American historic resources).

<sup>106</sup> 36 C.F.R. § 800.2(c)(2)(ii)(A). Courts have required consultation begin early and comply with both the spirit and the letter of the regulations, even when federal agencies have compelling reasons to move quickly. *See Quechan Tribe of the Fort Yuma Indian Reservation v. U.S. Dep’t of the Interior*, 755 F. Supp. 2d 1104, 1119 (S.D. Cal. 2010), discussed *infra* in Section III. *See also* 16 U.S.C. § 470a(d)(6) (obligating federal agencies engaging in Section 106 review to “consult with any Indian tribe or Native Hawaiian organization that attaches religious and cultural significance to properties” “of traditional religious and cultural importance to an Indian tribe or Native Hawaiian organization”); Alexander, *supra* note 79, at 902; Suagee, *supra* note 3, at 55 (noting that tribal opposition to projects can be costly and lead to delays if consultation does not proceed early in the development of a project). Note the jurisdictional parameters for Section 470a(d)(6): consultation with affected Tribes is required even if the project triggering NHPA is not on tribal land (i.e., the project is on federal or even private land), and even if the site is not “historic” (i.e., as long as the site is culturally or religiously significant), but only if NHPA itself applies. *See Narragansett Indian Tribe v. Warwick Sewer Auth.*, 334 F.3d 161 (1st Cir. 2003) (explaining that consultation with a tribe is required if the tribe “considers a site that might be affected by the undertaking to have religious or cultural significance”). If NHPA does not apply, then no consultation is required.

<sup>107</sup> 36 C.F.R. § 800.2(c)(2)(ii)(C). The Ninth Circuit has likened the government-to-government consultation requirement to a fiduciary relationship. *See Pit River Tribe v. U.S. Forest Serv.*, 469 F.3d 768, 788 (9th Cir. 2006), discussed *infra* in Section III.

<sup>108</sup> *See, e.g.*, Alexander, *supra* note 79, at 904 (noting that in practice, however, consultation has not always been efficient or mutually beneficial for

NHPA's rationale is simply that gathering information about a project's likely effects on surrounding historic resources will lead to decisions superior to those made without such information.<sup>109</sup> Thus, even if the agency ultimately discovers that its proposed action would harm historic resources, the agency is free to act as it chooses, provided it has followed NHPA's required procedures.<sup>110</sup>

## II. TRANSMISSION PROJECTS

Thousands of miles of new transmission lines are either under construction or planned for new development.<sup>111</sup> Industry experts argue that an efficient, stable, and affordable energy industry requires thousands of additional miles beyond what is already planned.<sup>112</sup> However, transmission lines are widely perceived as unsightly, disturbing many linear miles of natural environment and requiring the exercise of eminent domain to assemble contiguous corridors.<sup>113</sup> These perceptions of transmission lines often appear

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the lead agency and the affected tribes but that tribes have "special expertise regarding impacts on places that have religious and cultural significance") (citations omitted).

<sup>109</sup> *Nw. Bypass Grp. v. U.S. Army Corps of Eng'rs*, 552 F. Supp. 2d 97, 129 (D.N.H. 2008) (explaining that consultation with tribes allows federal agencies to develop and "evaluat[e] alternatives to the project that could avoid, minimize, or mitigate adverse effects on historic properties") (citations omitted) (internal quotation marks omitted); see also Lee Paddock & Lea Colasuonno, *Minimizing Species Disputes in Energy Siting: Utilizing Natural Heritage Inventories*, 87 N.D. L. REV. 603, 647 (2011) (discussing the environmental benefits of performing information gathering before approving energy infrastructure).

<sup>110</sup> MacGill, *supra* note 22, at 712. Upon making such a determination, an agency, of course, may elect to mitigate any adverse effects upon historic resources subject to whatever discretionary authority it otherwise possesses. See *infra* note 296. The important point here is that the agency is not obligated under NHPA to so mitigate.

<sup>111</sup> See EDISON ELEC. INST., *TRANSMISSION PROJECTS AT A GLANCE* viii (2013) (identifying that interstate transmission projects will account for approximately ten thousand miles of planned transmission line development over the next ten years).

<sup>112</sup> See DEP'T OF ENERGY, *supra* note 59, at 95–96 (reporting that more than twelve thousand miles of additional transmission lines would be cost effective). Texas alone is projecting to add nearly three thousand six hundred miles of transmission to move wind resources from the northern and western parts of the state to the population centers in the eastern parts. See AM. WIND ENERGY ASS'N & SOLAR ENERGY INDUS. ASS'N, *supra* note 25, at 1; PUB. UTIL. COMM'N OF TEX., *COMPETITIVE RENEWABLE ENERGY ZONE PROGRAM OVERSIGHT PROGRESS REPORT NO. 10 6* (2013).

<sup>113</sup> Lita Furby et al., *Public Perceptions of Electric Power Transmission Lines*, 8 J. ENVTL. PSYCHOL. 19, 20–28 (1988) (analyzing a variety of common complaints regarding transmission lines); Thomas Priestley & Gary W. Evans,

to make such projects undesirable and raise possible conflicts with the preservation of historic resources near proposed transmission lines.<sup>114</sup>

As described above, NHPA imposes procedural requirements on those transmission projects that constitute a federal undertaking.<sup>115</sup> Projects requiring federal financial support, a federal license, or federal approval must undergo NHPA's information-gathering process and allow for public comment and consultation with interested parties.<sup>116</sup> Compliance with review procedures such as NHPA is often time-consuming and costly for project developers, and it routinely serves as an opportunity for project opponents to stall or block an undesired project.<sup>117</sup> Whether to avoid federal review or for independent economic and timing reasons, some transmission project developers break a long project into discrete phases,<sup>118</sup> potentially making meaningful review of an

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*Resident Perceptions of a Nearby Electric Transmission Line*, 16 J. ENVTL. PSYCHOL. 65, 70-73 (1996); George G. Karady, *Environmental Impact of Transmission Lines*, in ELECTRIC POWER GENERATION, TRANSMISSION, AND DISTRIBUTION 20-1, 20-2, 20-3 (Leonard L. Grigsby, ed., 2007) (analyzing aesthetic impacts associated with power lines).

<sup>114</sup> See Furby et al., *supra* note 113, at 23.

<sup>115</sup> 16 U.S.C. § 470f (2012).

<sup>116</sup> *Id.* § 470w; see MacGill, *supra* note 22, at 708–12; discussion *supra* Section II.D (detailing the review and consultation procedures required under NHPA).

<sup>117</sup> See Meyer & Sedano, *supra* note 30, at E-8 to E-10 (describing a transmission project that underwent more than ten years of review); Hanna Conger, *A Lesson from Cape Wind: Implementation of Offshore Wind Energy in the Great Lakes Should Occur Through Multi-State Cooperation*, 42 LOY. U. CHI. L.J. 741, 753 (2011) (noting that claims against renewable energy projects are usually asserted during the permitting phase); Donald J. Kochan, *National Historic Preservation Act Initiatives Affecting the Natural Resources Industry*, 22 ENERGY & MIN. L. INST. 408, 408 (2002); Moran, *supra* note 7, at 187–89 (discussing coordination difficulties with transmission line development owing to the frequent requirement to receive entitlements to build from many different local jurisdictions, each of which may have a different process and different objectives).

<sup>118</sup> See, e.g., Press Release, Dep't of Interior, Interior Advances Offshore Atlantic Transmission Line, (May 14, 2012), available at <http://www.doi.gov/news/pressreleases/Interior-Advances-Offshore-Atlantic-Transmission-Line.cfm> (describing the phased construction of a transmission network connecting proposed offshore wind projects to land-based demand); *First Nation Partnership Formed to Advance Transmission Line*, NORTH AMERICAN WINDPOWER (Sept. 26, 2011) available at [http://www.nawindpower.com/e107\\_plugins/content/content.php?content.8634#.USp4CKU4uik](http://www.nawindpower.com/e107_plugins/content/content.php?content.8634#.USp4CKU4uik) (announcing a multi-phase transmission line). When the phasing is done deliberately to avoid review under the National Environmental Policy Act or NHPA, it is called “segmentation.” See *Save Barton Creek Ass'n. v. Fed. Highway Admin.*, 950

entire project very difficult if each phase is reviewed separately.<sup>119</sup>

Given the ambiguity over the scope of NHPA's reach and given the incentives for developers to segment projects to avoid or minimize NHPA review, two relevant questions for identifying and avoiding conflicts between historic preservation and the development of transmission lines arise. When does the development or planning of new transmission lines trigger federal historic preservation review, as discussed in Subsection A? How do federal historic preservation laws prevent segmentation of transmission projects, as discussed in Subsection B?

A. *When Is Review Under NHPA Required for New Transmission Line Development?*

A transmission line project goes through several phases throughout its life, though some individual phases may overlap or be iterative. In chronological order, transmission projects' primary phases are planning, development, construction, operation, and end-of-life decommissioning.<sup>120</sup> Recent federal policy has created a federally led pre-planning phase, which would occur prior to customary project planning.<sup>121</sup> The new federal pre-planning phase

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F.2d 1129, 1140 (5th Cir. 1992) (“‘Segmentation’ or ‘piecemealing’ is an attempt by an agency to divide artificially a [project] into smaller components to escape the application of NEPA to some of its segments. . . . ‘As a general rule under NEPA, segmentation of highway projects is improper for purposes of preparing environmental impact statements.’”). Although it is the project developers that are typically eager to avoid NHPA review, it is exclusively within the realm of the federal lead agency to make that decision. However, federal agencies are also often interested in avoiding the “cumbersome process” of NHPA review. *See Save Our Heritage v. FAA*, 269 F.3d 49, 62 (1st Cir. 2001) (“Understandably, agencies are loath to submit to this cumbersome process [of NHPA review] . . .”).

<sup>119</sup> *One Thousand Friends of Iowa v. Mineta*, 364 F.3d 890, 894 (8th Cir. 2004) (“A segmentation is improper when the segmented project has no independent justification, no life of its own, or is simply illogical when viewed in isolation.”) (emphasis omitted) (internal quotations omitted).

<sup>120</sup> *See* PUB. SERV. COMM’N OF WIS., ENVIRONMENTAL IMPACTS OF TRANSMISSION LINES 3 (2011) available at <http://psc.wi.gov/thelibrary/publications/electric/electric10.pdf> (listing the phases of transmission projects as “Design,” “Construction,” and “Post-Construction”); Office of Indian Energy and Economic Development, *Energy Transmission Project Phases and Activities*, TRIBAL ENERGY & ENVTL. INFO. CLEARINGHOUSE, <http://teeic.anl.gov/er/transmission/activities/act/index.cfm> (last visited Feb. 17, 2013) [hereinafter TEEI].

<sup>121</sup> The new federal policy was enacted through the Energy Policy Act of 2005, Pub. L. No. 109-58, 119 Stat. 594, and is codified at 16 U.S.C. § 824p(a)(1) (2006). *See Eagle, supra* note 70, at 46.

seeks to address congestion concerns market-wide, and would potentially expedite the development phase for certain projects.<sup>122</sup> As with most large infrastructure projects, transmission lines usually trigger procedural requirements under federal historic preservation laws during the planning and development phases when the project developers identify preferred corridors and alternatives, consider market feasibility, and seek federal permits, licenses, or funding.<sup>123</sup> The results of recent litigation suggest that federal historic preservation review is also required during the federal pre-planning phase.<sup>124</sup> This Subsection examines implications of historic preservation law during both the conventional project planning and development phases and the new pre-planning phase, an evolving area of policy with important implications for reducing transmission congestion.

### 1. *Transmission Project Planning and Development*

NHPA requirements attach when a proposed project becomes a federal undertaking, which for the purposes of transmission typically occurs during the transmission planning and development phases.<sup>125</sup> To determine whether a transmission line project constitutes an undertaking triggering NHPA review, it is instructive to examine four categories of projects separated according to the project's financing and ownership structure,

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<sup>122</sup> See 16 U.S.C. § 824p(a)(2), (b) (2012); see also Debbie Swanstrom & Meredith M. Jolivert, *DOE Transmission Corridor Designations & FERC Backstop Siting Authority: Has the Energy Policy Act of 2005 Succeeded in Stimulating the Development of New Transmission Facilities?*, 30 Energy L. J. 415, 446 (2009). The preplanning process will be led by the Department of Energy, which will coordinate all federal agency action and prepare a single environmental review to lead an efficient and timely process, so that the entire process is complete in one year. Eagle, *supra* note 70, at 47.

<sup>123</sup> Specifically, a developer's request for a federal permit, for federal funding or for use of federal lands triggers NHPA because a federal agency's affirmative response to such a request is almost certain to constitute an undertaking. See 16 U.S.C. § 470w(7) (defining "[u]ndertaking" under NHPA); see also Letter from Edward H. Comer, Vice President, Gen. Counsel & Corp. Sec'y, Edison Elec. Inst., to Brian Mills, Senior Planning Advisor, Office of Elec. Delivery and Energy Reliability, on Coordination of Federal Authorizations for Electric Transmission Facilities, Notice of Proposed Rulemaking, RIN 1901-AB18, 76 Fed. Reg. 77432 (Dec. 13, 2011).

<sup>124</sup> See *Cal. Wilderness Coal. v. Dep't of Energy*, 631 F.3d 1072, 1083 (9th Cir. 2011) (discussed in more detail in Section II.B, *infra*).

<sup>125</sup> Project development includes identifying project corridors, securing financing, and obtaining licenses and permits necessary to begin construction. See TEEI, *supra* note 120.

which this Subsection now defines.

“Category 1” projects are those owned and financed exclusively by the federal government, such as those controlled by the Bonneville Power Administration or the Tennessee Valley Authority.<sup>126</sup> “Category 2” projects are privately developed but receive some level of federal financial assistance, such as a federal loan guarantee.<sup>127</sup> “Category 3” projects are financed with private funds exclusively but require some federal license, permit, or approval.<sup>128</sup> Finally, “Category 4” projects are privately financed and require no federal license, permit, or approval.<sup>129</sup>

Category 1 projects are almost certain to be federal undertakings because they are carried out “by or on behalf of the agency.”<sup>130</sup> There appears to be little ambiguity that such projects require Section 106 review unless Congress were to give the agency no discretion over how, where, or whether to build the new lines.<sup>131</sup> Category 4 projects are similarly straightforward, as Section 106 does not apply in the absence of the federal

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<sup>126</sup> See, e.g., *Transmission Projects*, BONNEVILLE POWER ADMIN., <http://transmission.bpa.gov/business> (last visited May 17, 2011); *TVA's Transmission System*, TENN. VALLEY AUTHORITY, <http://www.tva.com/abouttva/index.htm> (last visited May 17, 2011).

<sup>127</sup> See e.g., Dep't of Energy, *Department of Energy Finalizes Loan Guarantee for New Transmission Project To Deliver Renewable Energy to Southwest*, ENERGY.GOV (Feb. 15, 2011, 12:00 AM), <http://www.energy.gov/articles/department-energy-finalizes-loan-guarantee-new-transmission-project-deliver-renewable> (describing a 235-mile transmission project in northern Nevada that received a \$343 million federal loan guarantee); NAW Staff, *WAPA, Utilities Planning Renewable Energy Transmission Project for Arizona*, N. AM. WINDPOWER (Sept. 16, 2011), [http://www.nawindpower.com/e107\\_plugins/content/content.php?content.8591#.USfPEKU4uil](http://www.nawindpower.com/e107_plugins/content/content.php?content.8591#.USfPEKU4uil) (announcing a transmission project that received a \$91 million federal loan).

<sup>128</sup> See Dep't of Energy, *Federal Permitting Transmission Tracking System*, E-TRANS, [hereinafter E-TRANS] <http://trackingsystem.nisc-llc.com/etrans/utility/Search.seam> (last visited Feb. 22, 2013) (providing up-to-date permitting information for seven transmission projects selected as part of a cross-agency collaboration); see also Klass & Wilson, *supra* note 17, at 1813 (describing the Interagency Rapid Response Team for Transmission, which has a mission of coordinating permitting and approvals for interstate transmission lines).

<sup>129</sup> These projects are likely to be rare.

<sup>130</sup> BRONIN & BYRNE, *supra* note 83, at 118 (“When the federal government itself proposes to demolish a building, build a dam, or fence rangeland, it seems obvious today that it engages in an undertaking subject to [Section] 106.”)

<sup>131</sup> This situation has previously occurred. See *Lee v. Thornburgh*, 877 F.2d 1053, 1057 (D.C. Cir. 1989) (concluding that Section 106 did not apply to a prison construction project funded with federal assistance where Congress delegated no approval functions to any federal agency).

government's participation.<sup>132</sup> A privately financed project that requires no federal licensing, funding, or approval will be outside the jurisdiction of NHPA.<sup>133</sup>

Category 2 projects are not automatically subject to the Section 106 review process, despite the plain language of the statute requiring a review of any "proposed . . . federally assisted undertaking . . . prior to the approval of the expenditure of any federal funds."<sup>134</sup> Instead of strictly construing the "any federal funds" provision to mean literally *any* federal funds, Section 106 has been interpreted to apply when there is "some form of federal approval, supervision, control, or . . . consultation, over the spending of federal funds."<sup>135</sup> Section 106 review is likely to be required for federal funding provided to transmission projects under the purview of discretionary, competitive grant programs where a federal entity awards funding based on an analysis of project's merits rather than according to a legislatively determined spending formula. NHPA is unlikely to apply to transmission projects that receive federal funds through block grants allocated to the states where a federal agency has no control over the expenditure of such funds on the transmission project in question<sup>136</sup> or when Congress allocates funds to be spent on particular transmission projects without agency discretion.<sup>137</sup>

Category 3 projects, as with Category 2 projects, occupy a gray area as to whether they are federal undertakings. Decisions interpreting Section 106 have determined historic review does not

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<sup>132</sup> See *Vieux Carre Prop. Owners, Residents & Assocs., Inc. v. Brown*, 875 F.2d 453, 458 (5th Cir. 1989) ("By its terms, only a federal agency can violate [Section 106].").

<sup>133</sup> At least two circuits appear to agree on this point: the Second and Fifth Circuits. See *W. Mohegan Tribe & Nation of N.Y. v. New York*, 246 F.3d 230, 232 (2d Cir. 2001) (resting the decision on the grounds that only a federal agency can violate NHPA, and declining to reach the question of whether NHPA only applies to federally funded projects); *Vieux Carre*, 875 F.2d at 453, 460 (construing Section 470(f) of the Act to mean that an agency need not act "unless it is about to approve an expenditure of federal funds or issue a license.").

<sup>134</sup> 16 U.S.C. § 470f (2012).

<sup>135</sup> *Woodham v. Fed. Transit Admin.*, 125 F. Supp. 2d 1106, 1110 (N.D. Ga. 2000) (emphasis added) (quoting *Maxwell St. Historic Pres. Coal. v. Bd. of Tr. of Univ. of Ill.*, No. 00 C 4779, 2000 WL 1141439, at \*4 (N.D. Ill. Aug. 11, 2000)).

<sup>136</sup> See *Bus. & Residents Alliance of E. Harlem v. Jackson*, 430 F.3d 584, 592 (2d Cir. 2005) (holding NHPA was not triggered because the federal agency administering a federal block grant program lacked any discretion in distributing the grants).

<sup>137</sup> See *Lee v. Thornburgh*, 877 F.2d 1053, 1057 (D.C. Cir. 1989).

apply when the agency performs “merely a ministerial act” such that the agency has “no discretion to consider environmental values.”<sup>138</sup> Major transmission line developments, however, generally require far more than “ministerial” agency actions. Many transmission projects require federal permits, permission from federal entities controlling land over which the proposed lines must travel, and often full-scale environmental impact statements under the National Environmental Policy Act (NEPA).<sup>139</sup> Projects undergoing NEPA review generally also require Section 106 review.<sup>140</sup> Thus, Category 3 projects will usually, though not always, require Section 106 review.

These four categories of transmission projects, differentiated mainly by financing strategy and ownership structure, should fairly readily illuminate whether NHPA review is required for a particular transmission project. Recent developments in transmission policy involving the creation of a federally led preplanning phase are much less settled, however.

## 2. *Federally Led Preplanning*

The purpose of NHPA is to require study and consultation early in the planning of projects in order to minimize adverse effects on historic resources.<sup>141</sup> Federal transmission policy similarly encourages planning efforts, but federal transmission planning focuses more on ensuring adequate transmission capacity without any explicit requirement to focus on the land use effects of transmission siting. Thus, there is an apparent disconnect between

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<sup>138</sup> *Sugarloaf Citizens Assoc. v. Fed. Energy Regulatory Comm’n*, 959 F.2d 508, 513 (4th Cir. 1992).

<sup>139</sup> *See, e.g.*, Classes of Actions that Normally Require EISs, 10 C.F.R. app D pt. 1021 (2005) (requiring environmental impact statements for transmission system additions and integration); Permits for Structures or Work in or Affecting Navigable Waters of the United States, 33 C.F.R. § 322.5(h)(5)(i) (2005) (requiring a federal permit for transmission lines crossing navigable waters). *See generally* E-TRANS, *supra* note 128 (listing in a table the variety and types of federal permits and actions required for seven different transmission line projects throughout the United States).

<sup>140</sup> *Sugarloaf Citizens Ass’n*, 959 F.2d at 515 (“The standard for triggering NHPA requirements is similar to that for triggering of NEPA requirements.”).

<sup>141</sup> *See* 36 C.F.R. § 800.2(c)(2) (directing federal agencies to begin consultation under NHPA “early in the planning process”); *see also* *Quechan Tribe of the Fort Yuma Indian Reservation v. U.S. Dep’t of the Interior*, 755 F. Supp. 2d 1104, 1108 (S.D. Cal. 2010); *Swanstrom & Jolivert*, *supra* note 122, at 427 (describing federal agencies’ compliance with a Congressional requirement that planning for new transmission capacity across federal lands include environmental review of corridor designations at the earliest possible times).

federal efforts at transmission planning to reduce congestion in the wholesale, regional electrical grid (i.e., capacity planning) and transmission planning to avoid the adverse effects on historic resources that transmission lines create (i.e., spatial planning).<sup>142</sup> Federal transmission planning policies ignore historic preservation analysis during capacity planning and as a result are missing the appropriate opportunity to avoid potential conflicts with historic preservation before those conflicts arise.

Ever since NHPA was adopted in the 1960s, electrical transmission infrastructure that constitutes a federal undertaking requires historic preservation review.<sup>143</sup> This changed in 2005, when federal transmission planning legislation sought to encourage transmission capacity planning without any prior or simultaneous historic preservation review. Further background about the urgency and challenges of transmission is necessary to understand Congress' apparent pivot away from requiring historic preservation review of all infrastructure constituting a federal undertaking and toward expedited development of additional transmission capacity. In recent decades, energy generation markets have become increasingly open to independent power producers,<sup>144</sup> costing publicly regulated utilities some of their

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<sup>142</sup> See Meyer & Sedano, *supra* note 30, at E-11. The purpose of capacity planning is to identify constraints in the transmission grid that limit the movement of electricity from source to load. See James W. Moeller, *Interstate Electric Transmission Lines and States' Rights in the Mid-Atlantic Region*, 40 B.C. ENVTL. AFF. L. REV. 77, *passim* (2013). FERC's July 2011 Order 1000 directs public utility transmission providers to engage in capacity planning. See Transmission Planning and Cost Allocation by Transmission Owning and Operating Public Utilities, 136 F.E.R.C. 61,051, (August 11, 2011) [hereinafter Order 1000]. Order 1000 may be one of the most significant federal policies for integrating renewable energy into the transmission grid through federally led capacity planning. See Shelley Welton & Michael B. Gerrard, *FERC Order 1000 as a New Tool for Promoting Energy Efficiency and Demand Response*, 42 E.L.R. 11,025, 11,025 (2012). Compliance with Order 1000 has proceeded slowly. See Smita Walavalkar, *Preliminary Review of Compliance Filings in response to FERC Order 1000: Mostly Business as Usual, a Few Bright Spots*, CLIMATE LAW BLOG (Mar. 18, 2013), <http://blogs.law.columbia.edu/climatechange/2013/03/18/preliminary-review-of-compliance-filings-in-response-to-ferc-order-1000-mostly-business-as-usual-a-few-bright-spots>.

<sup>143</sup> See discussion *supra* Subsection I.D.1.

<sup>144</sup> Hoang Dang, *New Power, Few New Lines: A Need for a Federal Solution*, 17 J. LAND USE & ENVTL. L. 327, 330 (2002). Electricity markets were long vertically integrated, with utilities owning generation, transmission, and distribution networks and either preventing or charging prohibitively high rates to non-utility generators for access to utility-owned networks. Since the turn of the century, federal and state policies have favored breaking up this monopolist

monopolist positioning in wholesale energy markets.<sup>145</sup> As a result, United States electricity grids have become more regional—many now encompass multiple states—and moved away from state-centric markets.<sup>146</sup> However, new market participants and increasing regionalization have combined to make transmission-capacity planning more difficult.<sup>147</sup> Industry observers recognize that the slow pace of transmission development hinders generation development and thereby creates grid instabilities and higher retail prices.<sup>148</sup> At the same time, transmission spatial planning is often difficult. Local aesthetic and environmental concerns stall new development, and some states are concerned that the benefits of new transmission capacity within their borders accrue primarily to out-of-state consumers.<sup>149</sup> These difficulties that transmission

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structure in many states and requiring utilities to allow non-utility generators (so-called “independent power producers” or merchant power producers) access to utility-owned transmission lines. Justifications for increasing access to transmission include: reducing costs to consumers, increasing reliability, and providing access to renewable sources of energy. Eagle, *supra* note 70, at 4, 13; *see also* Swanstrom & Jolivert, *supra* note 122, at 463.

<sup>145</sup> *See* Dang, *supra* note 144, at 332 (noting that deregulation of energy markets has increased some competition among formerly monopolist marketplaces, but that the benefits of such competition have not yet reached consumers).

<sup>146</sup> *See* Eagle, *supra* note 70; Meyer & Sedano, *supra* note 30 (discussing the regionalization of transmission lines); Swanstrom & Jolivert, *supra* note 122 at 418–19 (discussing the increasing regionalization of the electricity network).

<sup>147</sup> Dang, *supra* note 144, at 335 (describing barriers to transmission planning and development such as (1) the structure of the regional transmission organizations that oversee the flow of electricity to the grid from the generators and (2) the land use and siting authority over new transmission lines that the individual states hold).

<sup>148</sup> *See* YANG, *supra* note 13, at 10; Dang, *supra* note 144, at 332–33.

<sup>149</sup> *See* Brown & Daniels, *supra* note 24 (explaining that these two concerns comprise the thrust of the authors’ concerns regarding siting new transmission lines); *see also* Dang, *supra* note 144, at 336–40 (describing NIMBY and other obstacles presented by state and local control over transmission line siting, and identifying barriers in the structure of wholesale energy markets); Eagle, *supra* note 70 (collecting additional state court cases regarding states’ cost-benefit concerns about adding new transmission lines, and touching briefly on local environmental concerns regarding transmission lines). One of the major difficulties in developing new transmission is their length; lines routinely cross multiple jurisdictions. *See generally* Meyer & Sedano, *supra* note 30, at E-7. In those states where local review of transmission lines is not preempted by a state body, a transmission developer will likely require the approval of multiple municipal bodies, any one of which might “hold out” by exercising veto powers, which may have the effect of increasing the cost of the project or preventing it altogether. *See* Noor, *supra* note 66, at 157–58; discussion *supra* Section I (pointing out the difficulties of the large “footprints” of transmission projects).

infrastructure faced (and continues to face) with regard to both under-capacity and state and local resistance prompted Congress to act in a preemptive manner. Congress sought to expand transmission capacity and bypass states that withheld approval of new transmission.<sup>150</sup>

Congress included provisions in the Energy Policy Act of 2005 (EPAAct of 2005) intended to expedite the development of new transmission lines in high-congestion areas.<sup>151</sup> Pursuant to the EPAAct of 2005, the Department of Energy (DOE) issued regulations identifying two National Interest Energy Transmission Corridors (NIETCs).<sup>152</sup> DOE's two NIETCs, the Southwest Congestion Area and the Mid-Atlantic Congestion Area, encompass multiple counties across multiple states.<sup>153</sup> The corridors were so designated because both the Southwest and the Mid-Atlantic regions experience high levels of congestion.<sup>154</sup> Moreover, both regions are situated between important generation areas and heavy-load, high-congestion economic centers (primarily in Southern California and in the Northeast along the Boston-to-Washington corridor).<sup>155</sup> The NIETCs were to be used for planning purposes, to identify high-congestion areas, and to expedite the development of transmission through those areas.<sup>156</sup>

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<sup>150</sup> See Swanstrom & Jolivert, *supra* note 122, at 421–23 (describing the legislative impetus for new federal intervention in what had historically been the exclusive state realm of transmission siting); see also Ashley C. Brown & Jim Rossi, *Siting Transmission Lines in a Changed Milieu*, 81 U. COLO. L. REV. 705, 741–48 (2010).

<sup>151</sup> See 16 U.S.C. § 824p (2012) (codifying the Energy Policy Act of 2005, Pub. L. 109-58, 119 Stat. 594 (Aug. 8, 2005)). The EPAAct of 2005 was at least partially a response to massive blackouts that struck the Northeast in 2003. See Sowinski, *supra* note 66, at 506; Swanstrom & Jolivert, *supra* note 122, at 423.

<sup>152</sup> National Electric Transmission Congestion Report, 72 Fed. Reg. 56,992 (Oct. 5, 2007) [hereinafter NIETC Order].

<sup>153</sup> Swanstrom & Jolivert, *supra* note 122, at 434–36.

<sup>154</sup> *Id.*

<sup>155</sup> See Dep't of Energy, *Mid-Atlantic Area National Corridor Map*, ENERGY.GOV, [http://energy.gov/sites/prod/files/edg/news/archives/documents/MidAtlantic\\_Corridor\\_Map091707.pdf](http://energy.gov/sites/prod/files/edg/news/archives/documents/MidAtlantic_Corridor_Map091707.pdf) (last visited May 17, 2011); Dep't of Energy, *Southwest Area National Corridor Map*, ENERGY.GOV, [http://energy.gov/sites/prod/files/edg/news/archives/documents/SouthwestArea\\_CorridorMap91407.pdf](http://energy.gov/sites/prod/files/edg/news/archives/documents/SouthwestArea_CorridorMap91407.pdf) (last visited May 17, 2011).

<sup>156</sup> 16 U.S.C. § 824p(b). Section 824p(b) gave FERC the authority to override states that withheld approval on transmission project applications for more than a year or conditioned approval of project such that the conditions would prevent the proposed project from reducing transmission congestion or from becoming economically feasible. The same EPAAct of 2005 provision also gave transmission project developers the right to acquire rights-of-way via

DOE issued a final order designating its two NIETCs in late 2007.<sup>157</sup> A coalition of thirteen petitioners filed suit to stop the designation of the NIETCs in March 2008.<sup>158</sup> The challengers were largely environmental organizations and states, and the primary objection they raised was that the NIETC program failed to undergo the required review under federal environmental laws.<sup>159</sup> The National Trust for Historic Preservation (NTHP) was also a party to the suit, and the petition for review challenged the NIETC program on historic preservation grounds as well.<sup>160</sup>

The objections to the NIETC program on historic preservation grounds dealt with DOE circumventing the Section 106 process by establishing NIETCs without first consulting the ACHP.<sup>161</sup> Petitioners argued that the NIETC designation was an undertaking for the purposes of Section 106 insofar as even “nondestructive planning activities” trigger Section 106 if those activities “restrict the subsequent consideration of alternatives to avoid, minimize or mitigate the undertaking’s adverse effects on historic properties.”<sup>162</sup> The petitioners also argued that the purpose of the NHPA is to consider historic interests early in the process of developing new projects so that a project’s effects upon historic resources can be studied and avoided.<sup>163</sup> By putting transmission projects on a fast track and circumventing state review of siting decisions, NIETCs severely reduced the opportunity to study and mitigate adverse effects of transmission lines on historic resources.<sup>164</sup> DOE argued NEPA and NHPA review was

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eminent domain. *Id.* § 824p(e). FERC’s backstop authority (i.e., its authority to override state transmission siting decisions) was severely curtailed in a 2009 Fourth Circuit decision. *See* *PEC v. FERC*, 558 F.3d 304, 309–10 (4th Cir. 2009); *see also* Noor, *supra* note 66, at 145.

<sup>157</sup> *See* NIETC Order, *supra* note 152.

<sup>158</sup> *Cal. Wilderness Coal. v. Dep’t of Energy*, 631 F.3d 1072, 1083 (9th Cir. 2011).

<sup>159</sup> Reply Brief for Petitioners at 1–24, *Cal. Wilderness Coal. v. Dep’t of Energy*, 631 F.3d 1072 (9th Cir. 2011) (No. 08-71074) (arguing that the NIETC program failed to comply with NEPA and with the Endangered Species Act).

<sup>160</sup> *Id.* at 25.

<sup>161</sup> *Id.* at 25–27.

<sup>162</sup> Coordinated Opening Brief of Petitioners at 51, *Wilderness Society v. Dep’t of Energy*, 631 F.3d 1072 (9th Cir. 2008) (No. 08-71074).

<sup>163</sup> *Id.* at 48–50 (noting also that the federal defendants have ignored ACHP’s request that historic preservation review commence early in the capacity planning exercise).

<sup>164</sup> For instance, in its 2006 comments to DOE regarding the proposed designation of NIETCs, the NTHP wrote: “The study area for the proposed power line cuts right through the heart of the ‘Journey Through Hallowed

unnecessary because NIETCs contained no actual proposed projects (i.e., the program does not identify specific transmission alignments; it only identifies regions where increased transmission capacity is needed and where it will be expedited under federal review).<sup>165</sup>

In February 2011, the Ninth Circuit reversed DOE's Final Order implementing the NIETC programs in the Southwest and Mid-Atlantic regions and effectively sent the NIETC program back to the beginning.<sup>166</sup> The Ninth Circuit ruled DOE had failed to adequately consult with the "affected states" as it was obligated to do under the EAct of 2005.<sup>167</sup> The Ninth Circuit ruled that DOE's failure to undertake environmental review was improper, reversing on environmental grounds as well.<sup>168</sup> Despite the petitioners' extensive briefing opposing NIETCs under the NHPA, the court largely sidestepped that issue.<sup>169</sup> The Ninth Circuit implicitly took the position that for the purposes of whether the NIETC program should be subject to impact review, NEPA and NHPA have coextensive jurisdiction.<sup>170</sup>

Although DOE did not comply with Section 106 in its initial

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Ground'—a 175-mile-long corridor of American heritage running from Gettysburg to Monticello—which the National Trust featured at the top of its 2005 List of America's Eleven Most Endangered Historic Places. This major heritage tourism corridor includes 16 existing historic districts, 17 potential or proposed historic districts, 80,000 acres under easement, 4 National Historic Landmarks, 44 State and National Historic Sites, and 6 Civil War Battlefields." Letter from Elizabeth Merritt, Deputy General Counsel, Nat'l Trust for Historic Pres., to Samuel W. Bodman, Sec'y of Energy, Dep't of Energy, Comments on National Electric Transmission Congestion Study and National Interest Electric Transmission Corridor (NIETC) Designation, (Oct. 10, 2006) (footnotes omitted) (on file with author).

<sup>165</sup> *Cal. Wilderness Coal. v. Dep't of Energy*, 631 F.3d 1072, 1098–99 (9th Cir. 2011).

<sup>166</sup> *Id.* at 1107.

<sup>167</sup> Note that the consultation requirements on which the Ninth Circuit ruled were not those requirements under NHPA, but were instead separate consultation requirements under Section 216 of the EAct of 2005. *See id.* at 1080.

<sup>168</sup> *Id.* This ruling, however, should not be held to imply anything about how the court might have ruled if NEPA had been followed (or statutorily excluded) and NHPA not. *California Wilderness Coalition* does not stand for the proposition that NHPA review is not required for NIETC designation.

<sup>169</sup> *Id.* at 1106 ("As we hold that the Congestion Study and the NIETCs Designation must be vacated and the matter remanded to the DOE, we need not consider petitioners' claims under . . . NHPA").

<sup>170</sup> *See also Woodham v. Fed. Transit Admin.*, 125 F. Supp. 2d 1106, 1110 (N.D. Ga. 2000) ("[T]he scope of jurisdiction under the NHPA has been held to be coextensive with jurisdiction under the NEPA.") (citations omitted).

proceeding, it will have to do so on remand. DOE will have to evaluate the impact of its program on historic resources and solicit comments from the ACHP, tribes and SHPOs within each of the affected states, and the general public.<sup>171</sup> Approximately a decade after NIETCs passed as part of the EAct of 2005, its effectiveness in expanding future transmission capacity remains uncertain,<sup>172</sup> but it is clear that federally led efforts to plan new transmission capacity must undergo Section 106 review.<sup>173</sup>

B. *How Do Federal Historic Preservation Laws Prevent Segmentation of Transmission Projects?*

A particular challenge of siting and developing transmission lines is their length. Some lines run for hundreds of miles.<sup>174</sup> If

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<sup>171</sup> The ACHP filed comments with DOE in 2006. See Letter from John M. Fowler, Exec. Dir. ACHP to Samuel W. Bodman, Sec'y of Energy, Dep't of Energy, re. National Interest Electric Transmission Corridors (Oct. 10, 2006), available at [http://nietc.anl.gov/involve/searchcomment/act\\_displayfile.cfm?filename=Advisory\\_Council\\_on\\_Historic\\_Preservation.pdf](http://nietc.anl.gov/involve/searchcomment/act_displayfile.cfm?filename=Advisory_Council_on_Historic_Preservation.pdf).

<sup>172</sup> See Klass & Wilson, *supra* note 17, at 1817. Nearly eight years after receiving a legislative authorization under the EAct of 2005, NIETCs remain more theoretical than practical. The *California Wilderness Coalition* ruling effectively requires DOE to return to the beginning in designating NIETCs (which are a precursor to FERC's use of its backstop siting authority, discussed *supra* at note 156) and makes unequivocal DOE's obligation to consider the environmental effects of its designations. See Matthew J. Agen, *Transmission Tug-of-War*, PUB. UTILS. FORT., Nov. 2011 at 49, available at <http://www.fortnightly.com/fortnightly/2011/11/transmission-tug-war>.

<sup>173</sup> In the period since the Ninth Circuit overturned DOE's Final Order designating two NIETCs, the DOE and the Federal Energy Regulatory Commission have considered a number of options regarding the future of the NIETC program. See FERC Staff Preliminary and Conceptual Transmission Siting Proposal DRAFT 1, 1-3[hereinafter FERC Proposal]. For instance, DOE proposed rules that would coordinate portions of the transmission planning process, but those rules did not expressly mention NIETCs. DOE also proposed delegating the NIETC program to FERC, but that proposal appears to have been shelved, at least for now. Klass & Wilson, *supra* note 17, at 1818; Agen, *supra* note 172, at 49. FERC has identified its own plan for the NIETC program, but that plan has not been implemented either. See FERC Proposal at 4-8. In late 2012, DOE embarked on its third effort to study congestion in the interstate transmission system, as mandated by the EAct of 2005. See 16 U.S.C. § 824p(a)(1) (2012) (requiring DOE to prepare congestion studies every three years). As of this writing, it is not clear if from this study DOE will designate any NIETCs following the 2012 study. Following *California Wilderness Coalition*, it seems certain, however, that if DOE does designate any such corridors it will be obligated to conduct historic preservation and environmental reviews first.

<sup>174</sup> See *supra* note 17 (collecting examples of transmission lines planned to run for many hundreds of miles each).

wind resources in the High Plains from the Dakotas to North Texas are to be developed, perhaps thousands of miles of new transmission lines may be needed to transmit those resources to markets along the coasts and Great Lakes.<sup>175</sup> Long transmission projects are often developed piecemeal for financial, logistical, and other reasons, including avoiding the conflicts with local opponents or state regulators. One relevant concern for the development of transmission lines and the protection of historic resources is whether individual segments of large projects are evaluated separately for potential effects on historic resources. A project is inappropriately segmented under federal historic preservation laws if the segment subject to federal NHPA review has no “independent justification.”<sup>176</sup> This Subsection first examines NHPA’s treatment of project segmentation generally, and then reviews recent cases involving a segmented transmission project affecting historic resources.

#### 1. *Project Segmentation Under the NHPA*

Segmentation, the division of a project into discrete components for purposes of circumventing or simplifying review, often becomes a contentious issue in NEPA and NHPA proceedings.<sup>177</sup> Project developers will sometimes seek to split a project into discrete phases such that portions of a project with the greatest potential impacts on environmental or historic resources escape federal review.<sup>178</sup> Carving up a project into small pieces impedes the purposes of historic and environmental impact review, which is intended to understand the full breadth of a project’s effects. Under NEPA and NHPA, segmentation of projects is improper for the purpose of conducting impact reviews if the individual components do not have independent justification.<sup>179</sup>

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<sup>175</sup> See DEP’T OF ENERGY, *supra* note 59, at 95–96. As of today more than two hundred thousand miles of transmission lines are in operation. *Id.*

<sup>176</sup> *One Thousand Friends of Iowa v. Mineta*, 364 F.3d 890, 894 (8th Cir. 2004).

<sup>177</sup> See *Knowles v. U.S. Coast Guard*, No. 96 CIV. 1018(JFK), 1997 WL 151397, at \*3–5 (S.D.N.Y. Mar. 31, 1997).

<sup>178</sup> See *Save Barton Creek Ass’n v. Fed. Highway Admin.*, 950 F.2d 1129, 1139–40 (5th Cir. 1992). Generally, improper instances of segmentation involve a project that is found to require NHPA or NEPA review but is then segmented to escape the review of the part that is not imminent. *Id.* However, it is also the case that a project could be segmented before it reaches the point that any federal review is required. *Id.*

<sup>179</sup> *Piedmont Heights Civic Club v. Moreland*, 637 F.2d 430, 439–40 (5th Cir. 1981) (“A crucial inquiry necessary to determine whether transportation

Exceptions have deviated from this general rule, however. In *Winnebago Tribe of Nebraska v. Ray*, a transmission line crossing the Missouri River required a federal permit from the U.S. Army Corps of Engineers (USACE), but the USACE determined that the permit was not a “major federal action” for the purposes of NEPA and did not trigger NEPA’s review mechanisms.<sup>180</sup> The Winnebago Tribe challenged the USACE’s determination, arguing that the USACE had to consider the entire sixty-seven-mile transmission project, which on the whole constituted a “major federal action” for the purposes of NEPA and thereby required full NEPA review.<sup>181</sup> On appeal the Eighth Circuit agreed with the USACE, ruling that the USACE’s limited federal involvement (issuing a permit for a minor portion of a much larger project) did not suffice to “turn this essentially private action into a federal action.”<sup>182</sup> The court reasoned that the USACE did not have “sufficient control and responsibility” to require it to study the entire project.<sup>183</sup>

But the Eighth Circuit’s analysis in *Winnebago*, decided in 1980, may be out of step with more recent cases involving segmentation claims. In 2004, the Eighth Circuit held that “segmentation is improper when the segmented project has no *independent justification*, no life of its own, or is simply illogical when viewed in isolation.”<sup>184</sup> The more recent decisions have not focused on the *nature* or scale of the federal involvement as much

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projects have been improperly segmented is whether the projects have *independent utility*. The rule against segmentation developed in order to prevent environmental consideration of segments of [projects] in isolation of one another.” (emphasis added). Courts will apply a “segmentation analysis to ‘weed out’ projects which are pretextually segmented.” *Save Barton Creek*, 950 F.2d at 1139.

<sup>180</sup> 621 F.2d 269 (8th Cir. 1980). As a procedural *mechanism* NEPA’s “major federal action” trigger is roughly equivalent to NHPA’s “undertaking,” see *Sugarloaf Citizens Assoc. v. Fed. Energy Regulatory Comm’n*, 959 F.2d 508, 515 (4th Cir. 1992), although the triggering *standards* are slightly different (i.e., a federal action that constitutes an undertaking may not constitute a major federal action), see BRONIN & BYRNE, *supra* note 83 at 190.

<sup>181</sup> *Winnebago*, 621 F.2d at 272. The USACE was concerned only with the elements of the project that crossed a major river and which required USACE approval to fill waters protected under the federal Rivers and Harbors Act of 1899. *Id.*

<sup>182</sup> *Id.* at 273.

<sup>183</sup> *Id.* at 273. Crucial to the court’s analysis in *Winnebago* is the lack of any federal funding. *Id.*

<sup>184</sup> *One Thousand Friends of Iowa v. Mineta*, 364 F.3d 890, 894 (8th Cir. 2004) (emphasis added) (internal quotation marks omitted).

as the *utility* of the considered action.<sup>185</sup> Had the *Winnebago* court considered the independent justification for the pylons crossing the Missouri River, it likely would have determined that the short river crossing component of the transmission project was not independent of the entire project.<sup>186</sup> That is, the portion of the project that the USACE permitted likely had no utility independent of the longer sixty-seven-mile project. Without an independent justification for the river-crossing segment, the entire project would have to be considered a major federal action, and the USACE would have had to consider the effects of the entire project before issuing the permit.

The more recent test for improper segmentation has not yet been subject to Supreme Court review, and the Eighth Circuit's "independent justification" test is not applied universally. One alternative to the independent justification test is an "artificial avoidance" test employed recently in the Fifth Circuit.<sup>187</sup> In *National Trust for Historic Preservation v. United States Department of Veterans Affairs (NTHP)*, the court held that "[i]mproper segmentation occurs when an agency artificially divides a project from a major federal action . . . to avoid [compliance on that project.]"<sup>188</sup> This "artificial avoidance" test appears to impose an intent requirement on segmentation analysis, ignoring the "independent justification" test altogether. The intent requirement ignores historic preservation review's important objective of analyzing a project's adverse effects on historic resources.<sup>189</sup> The "independent justification" test is probably the better test to apply because it is a more objective approach to

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<sup>185</sup> *Id.*; see also *Defenders of Wildlife v. U.S. Dep't of the Navy*, 895 F. Supp. 2d 1285 (S.D. Ga. 2012) (considering factors such as "whether the proposed segment (1) has logical termini, (2) has substantial independent utility, (3) does not foreclose the opportunity to consider alternatives, and (4) does not irretrievably commit federal funds for closely related projects" in performing a segmentation analysis).

<sup>186</sup> The *Winnebago* Court took the view that Section 10 of the Rivers and Harbors Act of 1899, the authority under which the USACE was granting a permit to the project in question, was limited in scope. The court determined that the USACE's limited jurisdiction over the project did not require the USACE to apply NEPA to the entire project because a Section 10 permit did not constitute a "major federal action." *Winnebago*, 621 F.2d at 273.

<sup>187</sup> *Nat'l Trust for Historic Pres. v. U.S. Dep't of Veterans Affairs*, No. 09-5460, 2010 WL 1416729 at \*10 (E.D. La. Mar. 31, 2010) (quoting *Save Barton Creek Ass'n v. Fed. Highway Admin.*, 950 F.2d 1129, 1139 (5th Cir. 1992)).

<sup>188</sup> *Id.*

<sup>189</sup> See 16 U.S.C. § 470f (2012).

impact review and because it is more likely to capture those projects that are truly within federal jurisdiction.<sup>190</sup>

Courts have applied the two standards cited above to NEPA. Although NEPA and NHPA have different textual standards for invoking review, courts have often treated the triggering mechanisms for the two statutes as largely the same.<sup>191</sup> Given the paucity of segmentation-related decisions under the NHPA<sup>192</sup> and the relative abundance of segmentation rulings under NEPA, following NEPA's lead on segmentation may obviate the need for courts to start from scratch in determining when improper segmentation has occurred under NHPA. To effectuate the purposes of NHPA, the more recent Eighth Circuit's "independent justification" test for project segmentation appears to be the appropriate standard for analyzing future transmission line projects.<sup>193</sup>

## 2. *Transmission Line Segmentation in Harrison v. United States Department of Army*

A 2009 NHPA challenge to the construction of a transmission line offers a testing ground for applying NEPA's segmentation jurisprudence to NHPA.<sup>194</sup> The *Harrison* court declined to apply

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<sup>190</sup> Those projects that are a federal undertaking are subject to Section 106 review. *See id.* § 470w; discussion *supra* Section II.D (exploring the meaning of "undertaking" in the context of Section 106).

<sup>191</sup> *See Sugarloaf Citizens Assoc. v. Fed. Energy Regulatory Comm'n*, 959 F.2d 508, 515 (4th Cir. 1992); *see also Karst Env'tl. Educ. & Prot., Inc. v. EPA*, 475 F.3d 1291, 1295–96 (D.C. Cir. 2007) (noting that courts "treat 'major federal actions' under NEPA similarly to 'federal undertakings' under NHPA").

<sup>192</sup> *See Old Town Neighborhood Ass'n Inc. v. Kauffman*, 333 F.3d 732, 735 (7th Cir. 2003) (avoiding the issue of segmentation, even though concerns about improper segmentation were raised earlier in this case).

<sup>193</sup> Like the intent-driven "artificial avoidance" test in NTHP, the independent justification test has been described as having an intent component. *See, e.g., Stewart Park and Reserve Coal. Inc. v. Slater*, 352 F.3d 545, 559 (2d Cir. 2003) ("Segmentation is an *attempt to circumvent* NEPA by breaking up one project into smaller projects and not studying the overall impacts of the single overall project.") (emphasis added). However, the two tests are notably different in that the independent justification test has objective, project-based criteria upon which to determine whether the reviewing agency has attempted to circumvent review. *See, e.g., Defenders of Wildlife v. U.S. Dep't of the Navy*, 895 F. Supp. 2d 1285, 1300 (S.D. Ga. 2012) (reciting four factors relevant to a specific project for determining whether that project has been improperly segmented). It is the presence of an objective component, rather than the absence of an intent element, that, in this author's opinion, makes the independent justification test superior under NHPA.

<sup>194</sup> *Harrison v. United States Dep't of Army*, No. 3:08CV-105-H, 2009 WL

the independent justification test for its NHPA segmentation analysis. It is this author's view that, in general and unlike the reasoning applied in *Harrison*, a federal agency reviewing a project under NHPA should review the entire project unless the portion under review would have independent justification for its existence.

In *Harrison v. United States Dep't of Army*, plaintiffs challenged, on historic preservation grounds, the Army's decision to allow a 10.9-mile easement across Fort Knox, Kentucky, as part of a larger 41.9-mile transmission project.<sup>195</sup> The Army deemed the federal "undertaking" to be only the 10.9-mile portion of the proposed project that crossed the military installation, rather than the entire 41.9-mile project.<sup>196</sup> Petitioners' properties, listed in the National Register of Historic Places, were not along the 10.9-mile military easement corridor but were adversely affected by visual impacts of the transmission towers elsewhere along the project's total 41.9-mile corridor.<sup>197</sup> Petitioners argued that the Army, as part of the Section 106 process, should have considered the effect of the transmission line on the petitioners' historic properties.<sup>198</sup> The petitioners argued that the "undertaking" is the entire 41.9-mile project.<sup>199</sup> The district court rejected the petitioners' arguments and ruled that the Army correctly considered just the 10.9-mile portion of the project because that was the only portion of the project over which a federal agency exercised control.<sup>200</sup> The *Harrison* court adopted the approach in *Winnebago*, and declined to "federalize" the entire project because the Army's involvement was "minimal."<sup>201</sup>

Instead of looking to either of the more recent NEPA segmentation standards described above, the *Harrison* court followed the 1980 *Winnebago* decision and instead analyzed the nature of the federal involvement, rather than the independent utility of the segment.<sup>202</sup> The nature of the Army's role in *Harrison*

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3347109, at \*6 (W.D. Ky. Oct. 14, 2009).

<sup>195</sup> *Id.* at \*1. Notably, plaintiffs did not raise and the court did not rule on NEPA issues.

<sup>196</sup> *Id.*

<sup>197</sup> *Id.* at \*2, \*3.

<sup>198</sup> *Id.* at \*4.

<sup>199</sup> *Id.* at \*3.

<sup>200</sup> *Id.* at \*6, \*7.

<sup>201</sup> *Id.* at \* 6.

<sup>202</sup> *Id.* It is worth noting that this did not reach the appellate level. After the district court dismissed, plaintiffs appealed. Subsequently, plaintiffs withdrew

was very limited: the Army granted a ten-mile easement over property it controlled, and it did not review or have any jurisdiction to block the entire project.<sup>203</sup> Under this limited role, the *Harrison* court decided that the Army need not consider the effect of the entire project.<sup>204</sup> Moreover, without the easement, the project still would have been constructed (and still would have affected the petitioners' properties) because the Kentucky Public Utilities Commission had already approved an alternative route that did not cross any federally controlled land.<sup>205</sup> The Army's grant of an easement merely made the project shorter and cheaper for the developers. By considering the alternatives available to the project developer, the Army acted consistently with the objectives of the NHPA,<sup>206</sup> but it arguably misapplied the law with respect to the portion of the project subject to historic review.

The *Harrison* court probably erred in its holding by failing to apply the "independent justification" test because the portion of the project across the Army's land likely had no independent utility without interconnection to the portion of the project affecting the historic resources.<sup>207</sup> Federal involvement that is not so clearly segmented, but which indivisibly supports an entire project—for instance, a transmission line crossing federal land exclusively or that uses a DOE loan—requires Section 106 review for the entire project dependent upon the grant of federal license,

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their appeal, and the parties submitted to mediation. Order Entering Stipulation of Dismissal, *CDH Preserve, LLC v. United States Dep't of the Army*, No. 09-6355 (6th Cir. 2009) (ECF No. 66).

<sup>203</sup> *Harrison*, 2009 WL 3347109, at \*2.

<sup>204</sup> *Id.* at \*6.

<sup>205</sup> *Id.*

<sup>206</sup> *Id.* at \*3. Consistent with NHPA, the Army consulted with the SHPO, which ultimately issued a finding of "no adverse effect" on historic properties located along the ten-mile easement area.

<sup>207</sup> The independent justification criteria include whether the project under consideration (1) has logical termini, (2) has substantial independent utility, (3) does not foreclose the opportunity to consider alternatives, and (4) does not irretrievably commit federal funds for closely related projects. Here, the first, third, and fourth elements are readily dispensed with. The ten-mile segment across the Army facility clearly had logical termini—it was not a "project to nowhere." The project did not prevent consideration of other alternatives; in fact, it was predicated on alternatives being more costly than the preferred plan. Moreover, the project did not involve any federal funds.

The second element of the test is where the transmission line in *Harrison* fails the independent justification test. The ten-mile portion of the transmission line across the Army's facility did not have utility independent of its connection to the longer project.

funding, or approval. This application of “independent justification”—broader than that applied in *Harrison*—prevents the sort of segmentation encountered in *Harrison* that misses the effects on historic resources of a project made possible only by the federal undertaking.<sup>208</sup>

### C. *Historic Preservation and Transmission: Synthesis and Recommendations*

The touchstone for federal historic preservation review is federal involvement.<sup>209</sup> In the context of transmission project development, federal review of transmission projects appears to cover the portion of the project subject to federal control.<sup>210</sup> Thus, for projects receiving federal financing for the entire project, the entire project is most likely subject to Section 106, but for projects receiving a permit, easement or license for only a portion of the project, the non-federally controlled portion is outside the scope of Section 106.<sup>211</sup> Federally led transmission planning at multicounty, cross-border, sub-state scales is unambiguously subject to federal historic review jurisdiction.<sup>212</sup>

Despite this emerging clarity about the scope of federal jurisdiction over new transmission lines, conflicts remain between the competing objectives of historic preservation and new transmission capacity. Those interested in overcoming these conflicts should look to historic preservation policies applicable for other infrastructure projects. Recommended actions for integrating new technologies into historic landscapes conclude this

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<sup>208</sup> The presence of the alternative route should not have entered into the *Harrison* Court’s NHPA analysis. If the project developer did not want to wait for the Army to perform historic review on properties outside of its base, it could have chosen to build the longer, more expensive alignment.

<sup>209</sup> See 16 U.S.C. § 470w(7) (2012) (defining the scope of NHPA jurisdiction to include those projects, activities, or programs “funded in whole or in part under the direct or indirect jurisdiction of a *Federal* agency”).

<sup>210</sup> See *Winnebago Tribe of Nebraska v. Ray*, 621 F.2d 269, 273 (8th Cir. 1980).

<sup>211</sup> See *Harrison v. United States Dep’t of Army*, No. 3:08CV-105-H, 2009 WL 3347109, at \*6 (W.D. Ky. Oct. 14, 2009).

<sup>212</sup> See *Cal. Wilderness Coal. v. Dep’t of Energy*, 631 F.3d 1072, 1106 (9th Cir. 2011). Although the Ninth Circuit neglected to rule on NHPA grounds in *California Wilderness Coalition*, it seems safe to say that it would find NIETCs to be an undertaking within the scope of NHPA, just as it found NIETCs to be major federal actions within the scope of NEPA. See *San Carlos Apache Tribe v. United States*, 417 F.3d 1091, 1097 (9th Cir. 2005) (calling NEPA and NHPA “close statutory analog[s]”).

## Section.

### 1. *Problems Remain*

Portions of the transmission-related historic preservation jurisprudence appear to poorly align with historic preservation process objectives.<sup>213</sup> Preservation of historic properties is not much aided by an impact-review regime that applies to a ten-mile stretch within publicly inaccessible military facilities but not to neighboring historic landmarks.<sup>214</sup> At the same time, the already complex and expensive development of much-needed transmission is not aided by a multi-year two-stage historic review process, as the NIETC decision would seem to require.<sup>215</sup> The NIETC process as proposed by DOE in 2007 and as struck down by the Ninth Circuit in 2011 is a poor mechanism for siting transmission lines, because as implemented it would have effectively circumvented the NHPA review process.<sup>216</sup> Historic preservation review is important because it is an effective tool for preserving historic resources, but preservationists neither need nor deserve two bites at the proverbial apple. The NIETC concept deserves a legitimate shot at success because regional transmission planning is essential to overcoming a number of barriers in the transmission industry.<sup>217</sup>

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<sup>213</sup> The objectives of historic preservation review pertain primarily to gathering information regarding the adverse effects of a project on historic resources and identifying approaches to minimizing or mitigating those adverse effects. *See* Quechan Tribe of the Fort Yuma Indian Reservation v. U.S. Dep't of the Interior, 755 F. Supp. 2d 1104, 1109 (S.D. Cal. 2010) ("Section 106 requires identifying historic properties within a project's affected area, evaluating the project's potential effects on those properties, and resolving any adverse effects.").

<sup>214</sup> *See Harrison*, 2009 WL 3347109, at \*6; discussion *supra* notes 194–201 and accompanying text.

<sup>215</sup> *California Wilderness Coalition*, 631 F. 3d at 1072, discussed *supra* note 31, would seem to require NHPA review first at the pre-planning, corridor study stage, and then again if a project constructed in the NIETC meets the criteria to be a federal undertaking.

<sup>216</sup> *See id.* at 1101–04 (ruling that NIETCs are major federal actions subject to NEPA review). Although the Ninth Circuit focused its ruling on the DOE's failure to adhere to NEPA, the reasoning likely applies to NHPA as well. *Id.* at 1106. There is merit to both sides of the arguments about the environmental value of NIETCs and FERC's backstopping authority; additional transmission capacity makes it possible for renewable sources to reach market, but it also makes it easier for coal plants to reach market. *See Noor*, *supra* note 66, at 157–61.

<sup>217</sup> *See Eagle*, *supra* note 70, at 38–46; Meyer & Sedano, *supra* note 30, at E-11; Noor, *supra* note 216, at 155–56 (2009) (noting that renewable energy advocates were on both sides of the dispute over FERC's backstopping

The cases described above are illustrative of the conflicts that exist between transmission development and protection of historic resources. Reforms to the federal historic preservation review process for new transmission facilities are necessary, and existing policy mechanisms for other large infrastructure projects are informative.

2. *Historic Preservation Laws and New Development Products: Three Lessons*

To address segmentation and planning problems, historic preservation and transmission advocates should look to policy techniques applied in the context of other types of infrastructure development. Historic preservation advocates have worked out mutually beneficial compromises with new landscape-scale developments such as highways and natural gas pipelines.<sup>218</sup>

Techniques for coordinating conflicts with historic preservation in the highway and natural gas line context are relevant to new transmission line development because highways and natural gas pipelines share many common characteristics with transmission lines. Transmission lines are often referred to as energy “superhighways” because transmission lines and highways both require extensive, linear, interconnected conveyance corridors.<sup>219</sup> The concept of traffic congestion is nearly analogous to the concept of energy congestion (albeit with energy congestion and transmission occurring at or near the speed of light).<sup>220</sup>

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authority); Swanstrom & Jolivet, *supra* note 122, at 464–65.

<sup>218</sup> See BRONIN & BYRNE, *supra* note 83, at 212 (describing federal laws protecting historic resources from transportation projects); Christopher J. Castaneda, *History Beneath the Surface: Natural Gas Pipelines and the National Historic Preservation Act*, 26 PUB. HISTORIAN 105 (2004) (describing the reconciliation of tensions surrounding the preservation of natural gas pipelines).

<sup>219</sup> See YANG, *supra* note 13, at 22; Noor, *supra* note 66, at 149.

<sup>220</sup> See Sowinski, *supra* note 66, at 149. Regarding the similarities between electricity transmission networks and vehicular highways, see, for example, Noor, *supra* note 216, at 149–50: “To use a familiar analogy, traffic congestion can occur when lanes on a highway narrow, causing a bottleneck and resulting in a reduced flow of traffic. Similarly, electricity congestion occurs when there is a ‘transmission constraint’ at a certain point in a system that limits the amount of electricity flowing to consumers. The problem for electricity, unlike annoyed motorists, is that electricity cannot get off at the next exit and take an alternative route. This limitation can result in increased costs for consumers and blackouts.” But the analogy is not exact in the technical sense. When transmission congestion occurs, the electricity “traffic” is not held up or delayed (because the “traffic” is only capable of moving at one speed, the speed of light); rather, the request for the “delivery” of that electricity is denied. That denial leads to

Likewise, natural gas pipelines are analogous to transmission lines because both are interconnected and highly sensitive to moment-by-moment supply and demand.<sup>221</sup> Also, like transmission lines (but unlike highways), natural gas pipelines tend to be privately funded.<sup>222</sup> Looking to the experiences of transportation and natural gas networks with historic preservation, three types of federal agency actions are worth considering to mitigate conflicts between new transmission and historic preservation: (1) substantive review of new projects' effect on historic resources; (2) categorical exemption from historic preservation review; and (3) interagency cooperation. This Subsection examines these three types of actions as each has been applied to historic preservation, and the next Subsection discusses how each might be relevant to transmission lines.

a. *Substantive Review of New Projects' Effects on Historic Resources*

Unlike Section 106's mere procedural requirements to effect historic preservation objectives, Section 4(f) of the Department of Transportation Act of 1966 imposes substantive requirements on federal transportation projects with respect to the effect of such projects on historic resources.<sup>223</sup> Under Section 4(f), a federal transportation project or program may adversely affect historically significant sites and landscapes only if "there is no prudent and feasible alternative to using that land . . . and the program or

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blackouts. See BERNARD C. LESIEUTRE & JOSEPH H. ETO, ERNEST ORLANDO LAWRENCE BERKELEY NAT'L LAB., *ELECTRICITY TRANSMISSION CONGESTION COSTS: A REVIEW OF RECENT REPORTS 1* (2003); Bernard C. Lesieutre & Joseph H. Eto, *When a Rose Is Not a Rose: A Review of Recent Estimates of Congestion Costs*, 17 *ELECTRICITY J.* 59, 59 (2004).

<sup>221</sup> See Dang, *supra* note 144, at 342 (recommending reforms to transmission siting analogous to those applicable to natural gas lines). Note that new natural gas pipelines are required to undergo historic impact review. See Castaneda, *supra* note 46, at 109 (describing FERC's gas pipeline siting requirements, including SHPO consultation). *But see* Meyer & Sedano, *supra* note 30, at E-20 (warning that the natural gas siting regime is plagued with problems and may not be the best model for transmission lines to emulate).

<sup>222</sup> Carol A. Dahl & Thomas K. Matson, *Evolution of the U.S. Natural Gas Industry in Response to Changes in Transaction Costs*, 74 *LAND ECON.* 390, 405 (1998).

<sup>223</sup> See 49 U.S.C. § 303 (2012). Congress simply decided to impose upon the federal Department of Transportation a higher standard of preservation for historic resources than it imposed on other federal entities subject to NHPA. Barbara Miller, *Department of Transportation's Section 4(f): Paving the Way Toward Preservation*, 36 *AM. U. L. REV.* 633, 642 (1987).

project includes all possible planning to minimize harm . . . resulting from the use.”<sup>224</sup> That is, unlike Section 106, Section 4(f) precludes a certain alignment if that alignment would harm a historic resource and a feasible alternative exists.<sup>225</sup> If no feasible alternative exists, the project must mitigate harms to historic resources.<sup>226</sup> Section 106 contains neither the preclusion rule nor the mitigation rule of Section 4(f).<sup>227</sup>

Importantly however, the meaning of “adversely affect” under Section 4(f) includes a narrower range of situations than Section 106’s “undertakings.” Section 4(f) applies to instances where the transportation program or project requires “use of” the historic site.<sup>228</sup> This narrower application is an apparent trade-off for the more onerous effect Section 4(f) can have on transportation projects that affect historic resources.

Interpretation of “use” under Section 4(f) is the subject of much litigation,<sup>229</sup> which is largely beyond the scope of this article. However, Section 4(f) is instructive for resolving conflicts between transmission lines and historic resources insofar as it represents a mechanism for imposing stringent substantive review

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<sup>224</sup> 49 U.S.C. § 303(c); *see also* 23 C.F.R. § 771.135(a)(1)(i) (2008) (Department of Transportation regulations requiring avoidance of lands containing historic resources).

<sup>225</sup> Recall that Section 106 is merely an information-gathering requirement and does not dictate substantive outcomes for individual projects. *See Valley Cmty. Pres. Comm’n v. Mineta*, 373 F.3d 1078, 1085 (10th Cir. 2004); *see also* MacGill, *supra* note 22, at 721–22.

<sup>226</sup> 49 U.S.C. § 303(c).

<sup>227</sup> *See Save Our Heritage v. FAA*, 269 F.3d 49, 58 (1st Cir. 2001).

<sup>228</sup> *Id.* Determining whether the Department of Transportation’s action constitutes “use of” a historic site is a two-part inquiry. First, the Department must look at the harm to the site from the proposed project. Second, the Department must consider the site’s historical value. If the project is “fairly proximate” and has a “significant impact on the historic qualities of a structure” a use has occurred. *See* MacGill, *supra* note 22, at 727. In addition, the Department generally must also consider the no-build alternative. *Id.* Under NHPA, the federal agency must consider all historic resources in the undertaking’s area of potential effects. *See* 36 C.F.R. § 800.4(a)(1). The “area of potential effects” is the geographic area “within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist. The area of potential effects is influenced by the scale and nature of an undertaking and may be different for different kinds of effects caused by the undertaking.” *Id.* § 800.16(d).

<sup>229</sup> *See, e.g., Valley Cmty.*, 373 F.3d at 1092; *see also* Matthew J. Christian, *Proliferation and Expansion of America’s Airports at the Expense of its Treasured Parks and Preserves: Judicial Perversion of the Term “Use” in Section 4(f) of the Department of Transportation Act*, 3 NEV. L.J. 613, 615 (2003).

of infrastructure projects with significant and ongoing impacts on historic resources.<sup>230</sup>

b. *Categorical Exemption from Historic Preservation Review*

The ACHP-promulgated regulations afford ACHP considerable flexibility in implementing the review requirements of Section 106.<sup>231</sup> The ACHP has the authority to exempt entire categories of development from the historic preservation requirements of Section 106.<sup>232</sup> Two such exemptions have been promulgated with respect to this authority: one exemption applies to natural gas pipelines and the second applies to highways. The ACHP also has the authority to set forth a customized, standard treatment for any class of undertaking.<sup>233</sup>

In 2002, the ACHP promulgated an exemption for natural gas pipelines such that “all Federal agencies are exempt from the Section 106 requirement of taking into account the effects of their undertakings on historic natural gas pipelines.”<sup>234</sup> This rule has limited application on the development of *new* pipelines,<sup>235</sup> but it does signify that the ACHP is willing to act to exclude from regulation an entire class of infrastructure at one time with only

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<sup>230</sup> See *Save Our Heritage*, 269 F.3d at 58 (describing Section 4(f) as more “stringent” than NHPA).

<sup>231</sup> See 36 C.F.R. § 800.14.

<sup>232</sup> See *id.* § 800.14(c)(1) (“[ACHP] may propose a program or category of undertakings that may be exempted from review under the provisions of subpart B of this part, if the program or category meets the following criteria: (i) The actions within the program or category would otherwise qualify as ‘undertakings’ as defined in § 800.16; (ii) The potential effects of the undertakings within the program or category upon historic properties are foreseeable and likely to be minimal or not adverse; and (iii) Exemption of the program or category is consistent with the purposes of the act.”).

<sup>233</sup> *Id.* § 800.14(d)(1) (“The [ACHP], on its own initiative or at the request of another party, may establish standard methods for the treatment of a category of historic properties, a category of undertakings, or a category of effects on historic properties to assist Federal agencies in satisfying the requirements [the Section 106 regulations]”).

<sup>234</sup> Exemption Regarding Historic Preservation Review Process for Projects Involving Historic Natural Gas Pipelines, 67 Fed. Reg. 16,364, 16,364 (Apr. 5, 2002).

<sup>235</sup> That is, federal agencies overseeing the development of *new* pipelines are *not* exempt from Section 106. FERC oversees pipeline siting and has provisions for engaging in historic impact review of new pipelines. See 18 C.F.R. § 380.12(c)(2)(i)(D) (requiring consultation with the relevant SHPO); *id.* § 380.14 (requiring compliance with NHPA). See generally FED. ENERGY REGULATORY COMM’N (FERC), GUIDELINES FOR REPORTING ON CULTURAL RESOURCES INVESTIGATIONS FOR PIPELINE PROJECTS (2002) (describing standards for evaluating historic resources potentially conflicting with pipeline projects).

limited exceptions.

The emergence of this exemption is significant for its origin story. ACHP promulgated the exemption administratively when it appeared that legislative support was developing to require the exemption by law.<sup>236</sup> ACHP, perhaps worried about losing any power at the hands of Congress, decided to act first to craft an exemption that it controlled.<sup>237</sup> Comparable dynamics could prompt ACHP to act similarly with respect to transmission lines. A significant event—for instance a large blackout in the Northeast or in Southern California—could generate popular pressure to hasten the construction of new transmission, leading Congress to dispense with or weaken historic preservation review for new transmission capacity.<sup>238</sup>

ACHP has also exempted from Section 106 review the effects of any undertakings on portions of the federal interstate highway system as designated by the Federal Highway Administration.<sup>239</sup> The purpose of this exemption is to allow upgrades and improvements to the highway system.

Finally, ACHP has set forth a draft standard treatment for the rehabilitation of historic exterior masonry on Department of Defense properties.<sup>240</sup> Under this standard treatment, predefined

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<sup>236</sup> Castaneda, *supra* note 46, at 117.

<sup>237</sup> *Id.* (“The ACHP opposed a legislative amendment to the NHPA, so it proposed an alternative solution: a revision to the Section 106 historic preservation review regulations of the NHPA for natural gas pipelines. . . . The legislative amendment was removed when ACHP issued the administrative exemption.”).

<sup>238</sup> This scenario is not at all far-fetched. The 2003 blackout in the Northeast—largely a result of transmission grid problems—prompted Congress to give DOE and FERC NIETC designation authority and federal backstopping authority. Swannstrom & Jolivet, *supra* note 122, at 423. More recently, Superstorm Sandy left parts of New York City and some of its surrounding area without power for days. Governor Andrew Cuomo announced that increasing the electricity infrastructure is one of the adaptation responses necessary for future storms. See Ed Merta, *Gridlock Preempted? How Climate Change Could End State Control Over Electric Transmission Siting*, VISTA (State Bar of N.M.: Natural Res., Energy and Env'tl. Law Section), Winter 2013, at 2.

<sup>239</sup> See Exemption Regarding Historic Preservation Review Process for Effects to the Interstate Highway System, 70 Fed. Reg. 11,928, 11,931 (Mar. 10, 2005). Note, however, that each federal agency remains “responsible for considering the effects of its undertakings on other historic properties that are not components of the Interstate Highway System (e.g., adjacent historic properties or archaeological sites that may lie within undisturbed areas of the right of way).” *Id.*

<sup>240</sup> Draft Standard Treatments To Address Rehabilitation of Historic Exterior Masonry, 73 Fed. Reg. 33,387 (Jun. 12, 2008); see also *Guidance on Standard*

standard construction specifications are deemed to have no adverse effect on historic properties.<sup>241</sup> This provision seeks to speed up the restoration of a defined category of undertakings without engaging in repeated, time-consuming, and costly historic preservation review.<sup>242</sup>

c. *Interagency Cooperation*

Less than a month after promulgating its categorical exemption for historic pipelines, the ACHP entered into a memorandum of understanding (MOU) with nearly a dozen additional federal agencies regarding timelines and processes for issuing authorizations for the construction of new natural gas pipelines.<sup>243</sup> Under the 2002 natural gas pipeline MOU, the signatory agencies agreed to appoint a lead agency for all new natural gas pipeline applications (in this instance, the Federal Energy Regulatory Commission), set timelines for review early in the process, share information, communicate informally, and resolve all disputes through the White House Council on Environmental Quality (CEQ).<sup>244</sup>

In 2009, nine federal agencies entered into a similar MOU under the ACHP's "alternate procedures" regarding the coordination of federal agency review of transmission line projects on federal lands.<sup>245</sup> Under this MOU, DOE either will be or will

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*Treatments As Program Alternatives*, ADVISORY COUNCIL ON HIST. PRESERVATION, <http://www.achp.gov/standtreatment.html> (last visited Feb. 20, 2013).

<sup>241</sup> Draft Standard Treatments To Address Rehabilitation of Historic Exterior Masonry, 73 Fed. Reg. at 33,388.

<sup>242</sup> *Id.* at 33,389 (describing the standard treatment's benefit as a "quicker path to 'no adverse effect' or a Section 106 agreement [that] can greatly reduce the consultation workload of federal agencies that intend to rehabilitate their historic properties in accordance with the [Secretary of the Interior's Standards for Rehabilitation, 36 C.F.R. § 67]").

<sup>243</sup> INTERAGENCY AGREEMENT ON EARLY COORDINATION OF REQUIRED ENVIRONMENTAL AND HISTORIC PRESERVATION REVIEWS CONDUCTED IN CONJUNCTION WITH THE ISSUANCE OF AUTHORIZATIONS TO CONSTRUCT AND OPERATE INTERSTATE NATURAL GAS PIPELINES CERTIFICATED BY THE FEDERAL ENERGY REGULATORY COMMISSION (May 2002), *available at* [http://www.ferc.gov/industries/gas/enviro/gas\\_interagency\\_mou.pdf](http://www.ferc.gov/industries/gas/enviro/gas_interagency_mou.pdf).

<sup>244</sup> *Id.* at 4–7.

<sup>245</sup> MEMORANDUM OF UNDERSTANDING REGARDING COORDINATION IN FEDERAL AGENCY REVIEW OF ELECTRIC TRANSMISSION FACILITIES ON FEDERAL LAND 1 (Oct. 23, 2009), *available at* <http://energy.gov/sites/prod/files/Transmission%20Siting%20on%20Federal%20Lands%20MOU%20October%202009%2002009.pdf>.

designate the lead agency.<sup>246</sup> DOE is responsible for coordinating between the private applicants and other federal agencies, obtaining and disseminating information, setting and enforcing timelines, preparing the environmental impact statement (EIS) and administrative record, and implementing other review procedures.<sup>247</sup> Proposed rules would extend this cooperation to all new transmission line projects on federal lands.<sup>248</sup>

### 3. *Recommendations*

Three existing techniques for finding compromises between historic preservation and new infrastructure development should inform new transmission projects. There is no need to weaken historic preservation laws in order to accommodate new technologies. There is also no need to allow historic preservation laws to continue to delay unnecessarily or increase the expense of transmission line development. The following recommendations seek to overcome the ongoing planning and segmentation conflicts between historic preservation and transmission line development.

a. *Engage in Historic Preservation Review on an NIETC-Wide Basis Upon the Designation of an NIETC, and Issue Alternative Procedures to New Transmission Lines Within the NIETC*

An interagency cooperation mechanism is already in place for transmission projects on federal lands, so the most promising area for further policy innovation continues to be the NHPA regulations' program alternatives.<sup>249</sup>

One compromise to help reach the objectives of historic preservation and transmission development interests would be to implement Section 106 review at the NIETC (i.e., regional) scale, and then exempt from Section 106 (or provide a standard treatment under Section 106) any projects within a corridor that had already been studied. During the NIETC designation process, a corridor-

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<sup>246</sup> *Id.* at 2.

<sup>247</sup> *Id.* at 5–6.

<sup>248</sup> Coordination of Federal Authorizations for Electric Transmission Facilities, 75 Fed. Reg. 77432, 77433 (proposed Dec. 13, 2011) (to be codified at 100 C.F.R. pt. 900).

<sup>249</sup> See 36 C.F.R. § 800.14 (2012). Section 800.14(b) sets forth procedures for programmatic agreements among multiple agencies; Section 800.14(c) sets forth the requirements for categorical exemptions, as described above; and Section 800.14(d) sets forth requirements for setting forth “standard methods for the treatment of . . . a category of undertakings.”

wide study of historic resources would occur, and the relevant SHPOs, the tribal historic preservation officers (THPOs), ACHP, and members of the interested public would be consulted. Interested parties would comment to identify their preferred alignments corridor-wide. Once that process is complete, transmission projects in the corridor would move forward with limited or no review.<sup>250</sup> Fortunately, the ACHP's program alternative mechanisms could accommodate just such a scenario. As described above, ACHP regulations allow for "alternate procedures," allowing a federal agency to tailor Section 106 review to the agency's decision-making process.<sup>251</sup> In sum, the proposal is for transmission line spatial planning and capacity planning to occur simultaneously.

DOE should seek to promulgate either a categorical exemption or standard treatment under the ACHP's alternate procedures regulations to plan for historic preservation at NIETC-wide scales and eliminate or greatly limit Section 106 review for individual projects within NIETCs. Transmission developers, lead federal agencies, and preservationists would all benefit from these alternative regulations. Transmission developers would probably like this procedure because DOE would lead the Section 106 process, and once the process was completed and preferred alternatives identified, developers could commit capital without fear of further regulatory delay under NHPA. Federal agencies would likely prefer a streamlined process that eliminates questions about how to treat each separate proposal. Preservationists should prefer this approach because they will have a seat at the table at the earliest possible opportunity, selecting corridors on a regional-scale, rather than selecting from among what is often the lesser of a few evils on a project-by-project basis.

b. *Allow Separate Review of a Project Segment Only if the Segment Is Independently Justifiable*

Courts should consistently apply the "independent

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<sup>250</sup> ACHP, in consultation with all of the relevant parties, could set forth the expected review for each project. See 36 C.F.R. § 800.14(c)(6) ("Any undertaking that falls within an approved exempted program or category shall require no further review . . . unless the agency official or the [ACHP] determines that there are circumstances under which the normally excluded undertaking should be reviewed under [Section 106 regulations].").

<sup>251</sup> See 36 C.F.R. § 800.14; see also *Program Alternatives—36 CFR § 800.14*, ADVISORY COUNCIL ON HIST. PRESERVATION, <http://www.achp.gov/program/alt> (last visited May 17, 2011).

justification” test.<sup>252</sup> The test appears to be a widely accepted part of the NEPA review process, and there is an obvious benefit for continuing the trend of overlap between NEPA and NHPA. Courts, agencies, and private infrastructure developers all benefit from a single understanding of “segmentation” under both NEPA and NHPA. Both statutes have information gathering and alternatives analysis at their cores. Nothing can be gained and only confusion can result if, for example, a project is considered improperly segmented for the purposes of NEPA but not for NHPA.

The purposes under NEPA for the independent-justification test support its application to the NHPA review process. Under NEPA, segmentation analysis functions to capture those projects (or portions of a project) that are segmented as a pretext for escaping NEPA review.<sup>253</sup> The indicator of this segmentation is a lack of independent justification: “When the segmentation project has no independent jurisdiction, no life of its own, or is simply illogical when viewed in isolation, the segmentation will be held invalid.”<sup>254</sup> Likewise, under NHPA, if a portion of a project has no independent justification, it should not be analyzed separately from its larger context.

The independent justification test has a logical appeal for transmission lines. If a portion of a transmission line can stand alone (e.g., because it connects to and expands the capacity of an existing network) then it can be segmented from a larger project for the purposes of historic preservation review. If, however, a portion of a line is useless independent of a larger portion of a corridor, then its segmentation is inappropriate. This test has the benefit of being straightforward for courts, agencies, and developers to apply.

c. *Use Substantive Review of the Effect of Transmission Line Projects on Historic Resources as a Backup Option Only if NIETC-Scale Planning Proves Infeasible or if Segmentation Continues To Be a Problem*

A new substantive review process for transmission projects would certainly be consistent with the objectives of existing federal historic preservation law because it would theoretically

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<sup>252</sup> See discussion *supra* notes 119, 176, 184 and accompanying text.

<sup>253</sup> *Id.*

<sup>254</sup> *Save Barton Creek Ass’n v. Fed. Highway Admin.*, 950 F.2d 1129, 1139 (5th Cir. 1992).

lead transmission line developers to choose those corridors with the fewest impacts on historic resources. But substantive review might be an onerous tool to remedy conflicts between transmission line development and historic preservation. Allowing a federal body to deny certain transmission corridors on historic preservation grounds would almost certainly increase the cost of developing such corridors and may present a very difficult obstacle to overcome. It does not have same appeal as a policy that categorically exempts projects from historic preservation review following a combined capacity planning and spatial planning analysis.

In addition, substantive review of transmission line siting would represent a new role for the federal government in transmission line development, a role currently filled by the states.<sup>255</sup> This federalism concern is not to be lightly dismissed. Even if a Section 4(f) mandate were to apply to only those projects that directly cross or interfere with historic resources, such a substantive outcome would substantially interfere with state siting authority.<sup>256</sup> Finally, imposing substantive federal review almost certainly requires federal legislative intervention, which is often the most difficult and time-consuming policy-setting step. If a realistic goal is to protect historic resources while allowing new transmission to be developed, imposing a substantive federal barrier on transmission line site selection would appear to be the long, hard way to accomplish that goal.

Fortunately, the adverse effects of transmission line development likely do not justify the level of substantive review that prompted Congress to enact Section 4(f).<sup>257</sup> Transmission lines are not ripping apart historic downtown communities as highways

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<sup>255</sup> See ADAM VANN, CONG. RESEARCH SERV., R40657, THE FEDERAL GOVERNMENT'S ROLE IN ELECTRIC TRANSMISSION FACILITY SITING 1 (2010); Meyer & Sedano, *supra* note 30, at E-3. Indeed there is a strong argument that state and local governments are uniquely suited to performing these siting functions. Meyer & Sedano, *supra* note 30, at E-20 (noting that total preemption of state siting of transmission would be a major change and unlikely to win support and remarking that "all transmission siting is local"). However, even within states disputes arise between various government authorities over siting controls. See Moran, *supra* note 7, at 190–94.

<sup>256</sup> See VANN, *supra* note 255, at 9 (discussing strong opposition to FERC's backstopping authority in NIETCs under the EAct of 2005).

<sup>257</sup> See, e.g., Phelps, *supra* note 33, at 121, 126–27 (describing urban renewal's effects on neighborhoods and the subsequent response through historic preservation legislation).

did during the urban renewal era,<sup>258</sup> and the need for substantive federal review likely does not exist at present. However, substantive review of transmission line projects, when such projects directly affect historic resources, should remain an option that transmission developers and historic preservation advocates keep in mind if conflicts do not abate. As with Section 4(f), substantive review of transmission lines would likely be necessary only when a proposed transmission corridor would directly cross a historic site or landscape. Substantive review would not be triggered by adverse visual impacts on historic resources or landscapes that are some distance from the transmission corridor.

#### 4. *Relationship Between Transmission and Renewable Energy Generation*

Transmission and generation go hand in hand: the highly centralized electrical grid requires high-voltage transmission lines to move electricity from source to load, especially when the sources are utility-scale renewable sources located in remote areas far from load centers.<sup>259</sup> The conflicts between transmission and historic preservation must be solved if new renewable energy development is to be worthwhile, because new transmission is so integral to the development of renewable sources.

### III. RENEWABLE ENERGY PROJECTS

Utility-scale renewable energy projects are experiencing unprecedented growth,<sup>260</sup> and support from all levels of

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<sup>258</sup> See, e.g., *Citizens to Pres. Overton Park, Inc. v. Volpe*, 401 U.S. 402, 406 (1971) (requiring substantive review of a decision by the federal Department of Transportation to construct a multi-lane highway through a community park in downtown Memphis).

<sup>259</sup> Steven Ferrey, *Earth, Air, Water and Fire: The Classical Elements Confront Land and Energy*, 27 J. LAND USE & ENVT'L. L. 259, 278 (2012) (discussing the difficulty of moving renewable energy from remote areas to urban load centers).

<sup>260</sup> Utility-scale solar energy installations totaled 2,600 MW in 2010. This capacity total represents a doubling over the previous years' total installed capacity. *Industry Data*, SOLAR ENERGY INDUSTRIES ASS'N, [http://www.seia.org/cs/research/industry\\_data](http://www.seia.org/cs/research/industry_data) (last visited May 17, 2011). In 2012, the new installed capacity totaled 3,200 MW. The United States has become the world's fourth largest solar energy producer, and is expected to become the largest within the next five years. Incentives to develop solar power continue to be strong, even in northern states not conventionally considered to be solar "hotspots." See *Solar Policy Guide*, DSIRE SOLAR, <http://www.dsireusa.org/solar/solarpolicyguide/?id=10> (last visited May 17, 2011).

government is one of the most important contributing factors. DOE has set an informal target of supplying 20 percent of the nation's energy from wind by 2030,<sup>261</sup> the federal government has taken significant steps to open federal lands and federal waters to renewable energy development,<sup>262</sup> and members of both parties have shown support for the continuation of tax incentives for investment and project development.<sup>263</sup> Even before the current administration began championing renewable sources and increasing regulations on fossil fuel sources, many states implemented policies to spur renewable energy development.<sup>264</sup>

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Utility-scale wind has out-paced utility-scale solar. The United States now has 60,000 MW of wind power, with nearly one quarter of that total added in 2012 alone. Wind constituted 42 percent of all new electrical generating capacity constructed domestically in 2012. *Wind Energy Facts at a Glance*, AMERICAN WIND ENERGY ASSOC., <http://www.awea.org/Resources/Content.aspx?ItemNumber=5059> (last visited Nov. 30, 2014). Yet wind energy's potential is nowhere near being met. Conservative estimates indicate the country has in excess of 14.5 million MW potential, and a significant proportion of that potential is offshore. See Schroeder, *supra* note 46, at 1632. Today, the United States has 0 MW of installed offshore wind capacity, *id.*, although several pioneering projects are at various stages of planning and development. States along the Atlantic and Great Lakes coasts are lining up to issue RFPs and RFIs, yet the first pylon has not been erected. *Id.* at 45, at 1666–67 (describing proposed offshore wind projects off the coasts of New Jersey, Rhode Island, Delaware, New York, Georgia, Texas, Ohio, and Maine). Michigan and North Carolina are also considering projects. See Conger, *supra* note 117, at 788 n.294.

<sup>261</sup> See, e.g., DEP'T OF ENERGY, *supra* note 59. However, Congress has not adopted the sort of renewable energy quota existing in more than half of the states at present. See Outka, *supra* note 64, at 247–48.

<sup>262</sup> Significantly, as part of the EPAct of 2005, Congress required the administration to open federal lands to accommodate 10,000 MW of renewable energy projects by 2015. Klass & Wilson, *supra* note 17, at 1825; see also Eric S. Spengle, *A Shift in the Wind: The Siting of Wind Power Projects on Public Lands in the Obama Era*, 86 IND. L. J. 1185 (2011) (detailing changes in federal land management policies to facilitate the development of renewables); Amanda H. Miller, *A Solar First: Permission to Build on Government Lands*, CLEANENERGY AUTHORITY (Oct. 11, 2010), <http://www.cleanenergyauthority.com/solar-energy-news/solar-projects-on-public-lands-10111>; *Largest Federally-Owned Wind Farm Breaks Ground at U.S. Weapons Facility*, DEP'T OF ENERGY (Aug. 13, 2013), [http://energy.gov/articles/largest-federally-owned-wind-farm-breaks-ground-us-weapons-facility?utm\\_medium=email&utm\\_source=govdelivery](http://energy.gov/articles/largest-federally-owned-wind-farm-breaks-ground-us-weapons-facility?utm_medium=email&utm_source=govdelivery).

<sup>263</sup> See American Recovery and Reinvestment Act (ARRA), Pub. L. No. 111-5, § 1603, 123 Stat. 115 (2009) (allocating tax credits for production of renewable energy and investment in renewable energy); Family and Business Tax Cut Certainty Act of 2012, Pub. L. No. 112-240, § 407, 126 Stat. 2313, 2340 (2013) (extending the "Production Tax Credit" for renewable energy sources); see also Ferrey, *supra* note 259, at 269–76 (describing federal tax incentives for renewable energy development).

<sup>264</sup> A common state-led technique is the renewable portfolio standard, which

One of the most important federal incentives for renewable energy has been subsidized access to undeveloped federal lands. Wind and solar projects enjoy economies of scale, and developing large projects on federal lands avoids the higher costs associated with purchasing the rights to develop on private lands.<sup>265</sup> Federal lands, including offshore areas under federal control, have become a significant locus for conflicts between historic preservation and new solar and wind projects. From a historic preservation perspective, offshore wind and large-scale solar adversely affect the viewsheds of historic resources, including sacred tribal areas and historic maritime landscapes.<sup>266</sup>

The jurisdictional and segmentation questions that transmission projects raise are unlikely to be contested for offshore wind projects or utility-scale solar projects on federal lands: projects on federal lands or in federal waters will generally be a federal undertaking, necessitating NHPA review.<sup>267</sup> But even with NHPA review, efforts to protect historic resources from large renewable energy projects have met with mixed results, and the uneven end results would benefit from an improved planning process. To identify and avoid conflicts between historic preservation objectives and the development of utility-scale

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requires utilities operating within a state to acquire a state-determined percentage of their energy from a menu of renewable sources. See Steven Ferrey, *Sustainable Energy, Environmental Policy, and States' Rights: Discerning the Energy Future Through the Eye of the Dormant Commerce Clause*, 12 N.Y.U. ENVTL. L. J. 507, 529–32 (2004). California, for instance, recently raised its renewable portfolio standard requirements to 33 percent by 2020, meaning fully one third of the state's power will come from renewable sources. Chris Meehan, *California Signs Renewable Energy Mandate Into Law*, CLEANENERGY AUTH. (Apr. 14, 2011), <http://www.cleanenergyauthority.com/solar-energy-news/california-makes-rps-into-law-041411>.

<sup>265</sup> Wiseman et al., *supra* note 19, at 850 (describing the high costs associated with assembling the right to develop large-footprint utility-scale renewable energy projects on privately-owned land).

<sup>266</sup> M.W. Marinakos, *A Mighty Wind: The Turbulent Times of America's First Offshore Wind Farm and the Inverse of Environmental Justice*, 2 EARTH JURISPRUDENCE & ENVTL. JUST. J. 82, 84 (2012). Other adverse effects of solar projects include detrimental impacts to wildlife, Sarah Pizzo, *When Saving the Environment Hurts the Environment: Balancing Solar Energy Development with Land and Wildlife Conservation in a Warming Climate*, 22 COLO. J. INT'L ENVTL. L. & POL'Y 123, 135 (2011), while other adverse impacts of wind projects include noise, Roger L. Freeman & Ben Kass, *Siting Wind Energy Facilities on Private Land in Colorado: Common Legal Issues*, 39 COLO. LAW. 43, 53 (2010).

<sup>267</sup> See *supra* Section I.D.1 (discussing the jurisdictional requirements triggering NHPA review).

renewable energy projects, this Article considers two relevant issues. Subsection A below discusses whether federal historic preservation laws adequately protect historic resources from the adverse effects of large, utility-scale renewable energy projects on federal lands. Subsection B argues historic designation is not the appropriate mechanism for protecting those large, historic seascapes that are likely to be the location for offshore wind resource development.

A. *Do Federal Laws Adequately Protect Historic Resources from the Adverse Effects of Utility-Scale Renewable Energy Projects on Federal Lands?*

Utility-scale wind and solar projects rely on numerous subsidies to be cost competitive with conventional energy sources.<sup>268</sup> One of the most important subsidies for utility-scale renewable energy projects is access to expansive, contiguous tracts of federal lands to site large projects.<sup>269</sup> However, energy development is just one of many competing interests for federal lands. Federal land managers also have mandates to accommodate recreational users, preserve unique ecosystems, and respect the practices and traditions of tribal cultures.<sup>270</sup> As discussed below, tribal communities have been active in opposing utility-scale renewable energy projects under federal historic preservation laws in order to protect tribal historic resources.<sup>271</sup> NHPA effectively identifies impacts on historic resources on federal lands if the federal agencies coordinating development rigorously adhere to NHPA's procedural requirements. Federal agencies can design mitigation measures to protect historic resources, but they are not obligated to maximize historic resource protection. Without

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<sup>268</sup> See Outka, *supra* note 30 (discussing cost barriers to renewable energy development).

<sup>269</sup> Vast stretches of federally controlled public lands are well-suited to renewable sources, particularly solar, geothermal, and wind. Federal agencies such as the Bureau of Land Management, the United States Forest Service, and the National Park Service, among others have accommodated fossil fuel energy development and other private resource extraction programs on public lands for decades.

<sup>270</sup> The Federal Land Policy and Management Act of 1976, Pub. L. No. 94-579, 90 Stat. 2743 (codified as amended at 43 U.S.C. §§ 1701–1785 (2006)) provides for consideration of multiple resource users on federal lands.

<sup>271</sup> See also Mik Moore, *Coalition Building Between Native American and Environmental Organizations in Opposition to Development: The Case of the New Los Padres Dam Project*, 11 ORGANIZATION & ENVT. 287, 287 (1998).

“teeth” to protect historic resources on federal lands, NHPA falls short of its goals. This Section examines three recent cases involving tribal challenges to projects under NHPA’s consultation procedures.

1. *Challenge to a Solar Project on Bureau of Land Management Land in Southern California*

Federal agencies’ failure to adequately consult with tribal leaders regarding potentially affected historic resources is at the heart of multiple recent challenges to renewable energy development on federal lands. In *Quechan Tribe v. Department of Interior (Quechan Tribe I)*, the Quechan Tribe (the Tribe) sued the federal Bureau of Land Management (BLM) to stop construction on a seven hundred megawatt solar array constructed across six thousand acres of BLM land in California and Arizona.<sup>272</sup> The Tribe complained that BLM did not “adequately or meaningfully consult with them, but instead approved the project before completing the required consultation.”<sup>273</sup> In December 2010, the Tribe sought and received a preliminary injunction, halting the project.<sup>274</sup>

The BLM, the developer, and state regulators were under pressure to move the project into development quickly.<sup>275</sup> The

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<sup>272</sup> 755 F. Supp. 2d 1104, 1104 (S.D. Cal. 2010). The solar project’s developers proposed erecting approximately thirty thousand solar collectors, some of which would be nearly fifty feet high. *Id.* at 1107. Roads, structures, and power lines would also accompany the project. *Id.* The project site was located within an area of historic use and significance to the Tribe and contained hundreds of known resources as well as surface archaeological sites. *Id.*

<sup>273</sup> *Id.* at 1108.

<sup>274</sup> *Id.*

<sup>275</sup> Several parties involved in the project’s approval had incentives to ensure the project moved quickly towards construction and completion. The project developers were interested in moving the project along quickly to take advantage of incentives available to renewable energy projects under the federal ARRA, as some incentives were set to expire by the end of 2010. Chris Meehan, *California Approves Two More Gigantic Solar Plants*, CLEANENERGYAUTHORITY.COM (Sept. 29, 2010), <http://www.cleanenergyauthority.com/solar-energy-news/genesis-and-imperial-valley-plants-092910>. If the project was not substantially underway by the end of the calendar year, the project would not be eligible for those incentives. The California Energy Commission was similarly interested in the project progressing rapidly because the Commission was under a statutory obligation to ensure that 20 percent of the state’s electrical energy needs are met via renewable sources by the end of 2011. Finally, the BLM was under political pressure from the Obama administration, Secretary Salazar, and Congress to “fast-track” solar energy development on public lands. Frank Quimby et al., *Secretary Salazar, Senator Reid Announce “Fast-Track” Initiatives for Solar*

Tribe complained BLM neglected to adequately complete the consultation requirements of the NHPA because it was not until October 2010, after the project had been approved, that BLM met with the Tribe's government in a government-to-government meeting.<sup>276</sup> As a result of this egregious procedural deficiency, the project was initially halted.<sup>277</sup>

## 2. *Challenge to a Geothermal Project on United States Forest Service Land in Northern California*

Whereas the solar development in *Quechan Tribe I* operated on an accelerated, "fast-track" timeline (going from concept to approval in approximately two years), a large-scale geothermal project near Medicine Lake in the mountains of northeastern California percolated through public and private approvals for

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*Energy Development on Western Lands*, BUREAU OF LAND MGMT. (June 29, 2009), [http://www.blm.gov/wo/st/en/info/newsroom/2009/june/NR\\_0629\\_2009.html](http://www.blm.gov/wo/st/en/info/newsroom/2009/june/NR_0629_2009.html).

<sup>276</sup> BLM had initiated correspondence with the Tribe as far back as January 2008 regarding development of a solar project at the site. In November 2008, the project's developer submitted an application to BLM for a right-of-way to develop the project. The developer subsequently reapplied to BLM in 2009 under BLM's above-mentioned fast-track program. The Tribe wrote to the BLM in February 2010 and again in August 2010 expressing frustration with being excluded from communication regarding approval of the project. It was not until August 2010 that BLM consulted with the Tribe regarding the Tribe's understanding of the project site's cultural significance. *Quechan Tribe I*, 755 F. Supp. 2d at 1112–13.

In granting the Tribe's motion for a preliminary injunction for BLM's failure to engage in adequate and timely consultation, the trial judge noted that BLM's "contact" (i.e., via letters and invitations to public meetings) failed to fulfill the required "consultation." The trial judge equated the Tribe's request for "private, closed meetings" with NHPA's government-to-government consultation requirements; BLM's failure to engage in the former was a violation of the latter. Moreover, the trial judge noted that BLM failed to provide to the Tribe essential information about the project's location, timing, and development. When it finally did provide the Tribe with the requisite information in July 2010, the BLM gave the Tribe insufficient time to review and comment upon the proposed project. The project's developer ultimately agreed to withdraw the project and refile. See Stipulation of Voluntary Dismissal without Prejudice pursuant to FRCP 41(a)(1)(A)(ii), *Quechan Tribe of the Fort Yuma Indian Reservation v. U.S. Dep't of the Interior*, No. 10cv2241-LAB (CAB) (S.D. Cal. Oct. 14, 2011), ECF No. 65.

<sup>277</sup> In May 2012, the Quechan Tribe again sued the Department of Interior, this time to stop a utility-scale wind project, alleging, inter alia, procedural deficiencies with NHPA. See *Quechan Tribe of the Fort Yuma Indian Reservation v. U.S. Dep't of the Interior* (*Quechan Tribe II*), 927 F. Supp. 2d 921 (S.D. Cal. 2013). A February 2013 ruling by the U.S. District Court for the Southern District of California allowed the project to proceed. *Id.*

nearly thirty years.<sup>278</sup> *Pit River Tribe v. United States* involved another California tribe's concerns with the effects of a renewable energy project on historic resources. As in *Quechan Tribe I*, the permitting federal agency failed to adequately consult with the tribe.<sup>279</sup>

The mountainous area of the proposed project was on federal and not tribal land, but the mountains held important cultural significance to the Pit River people and their history.<sup>280</sup> The project in *Pit River Tribe* proposed to disturb nearly fifty acres near the Medicine Lake caldera.<sup>281</sup> The project required disturbing an additional three hundred acres to accommodate a transmission line from the project site to a larger transmission line twenty-four miles away.<sup>282</sup> Yet, in the thirty years from concept to approval, no federal official reached out to the Pit River Tribe in a government-to-government consultation as required under NHPA.<sup>283</sup> The Pit River Tribe complained that the United States Forest Service (USFS) ignored NHPA (and NEPA). The Ninth Circuit agreed and enjoined the project for failure to comply with procedures set forth

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<sup>278</sup> *Pit River Tribe v. U.S. Forest Serv.*, 469 F.3d 768 (9th Cir. 2006). During the 1970s, America's first period of exuberance toward renewable energy sources, Congress passed the Geothermal Steam Act. See 30 U.S.C. §§ 1001–1025 (2012). The act directed the Department of the Interior and the United States Forest Service to issue leases for the development and utilization of geothermal steam. *Id.* § 1002. In 1973, the Department of the Interior issued a programmatic EIS on geothermal projects nationwide. *Pit River Tribe*, 469 F.3d at 773. More than a decade later, in 1984, the Forest Service issued an environmental assessment for the Medicine Lake area and a finding of no significant impact for leasing geothermal sites, and notified California's SHPO of its intent to commence leasing. *Id.* at 773–74. In 1988, BLM and the Forest Service entered into the leases at issue in *Pit River*. *Id.* at 775. In 1994, a geothermal project developer began exploratory work, and in 1995 the developer issued an operation plan to BLM and the Forest Service for the agencies to commence environmental and historic preservation review. *Id.* at 776. The agencies again issued a finding of no significant impact. *Id.* In 1998, BLM and the Forest Service extended the developer's lease for five more years, and finally, in 2002, the agencies extended the lease for an additional forty years. *Id.* at 777–78. Neither lease extension was accompanied by any environmental or historic preservation review. *Id.* at 777.

<sup>279</sup> *Pit River Tribe*, 469 F.3d at 777.

<sup>280</sup> In 1999, the Keeper of the NRHP determined Medicine Lake to be eligible for the NRHP, and stated that “no mitigation” can offset the “significant impact” of the proposed geothermal projects. *Id.*

<sup>281</sup> *Id.* at 776.

<sup>282</sup> *Id.*

<sup>283</sup> The Ninth Circuit noted it was “undisputed that no consultation or consideration of historical sites occurred in connection with the lease extensions.” *Id.* at 787.

in historic preservation and environmental laws.<sup>284</sup> For this failure, and for USFS's similar dereliction of its obligations under NEPA, the circuit court nullified the federal lease extensions granting the developer the right to build the project.<sup>285</sup>

### 3. *Challenge to a Wind Project off of the Coast of Massachusetts*

The final renewable energy project this Section will consider is Cape Wind. Located in Nantucket Sound off of the coast of Massachusetts, the project proposes to install more than one hundred wind turbines over a twenty-four square mile stretch of ocean.<sup>286</sup> Each turbine is more than two hundred fifty feet tall and will be anchored into the seabed via foundations drilled deep below the benthic surface.<sup>287</sup> Though located far from the shoreline, the turbines will nonetheless be visible on land.<sup>288</sup>

After nearly a decade of stops and starts, litigation, and regulatory uncertainty, the project's lead agency, the Minerals Management Service (MMS, now Bureau of Ocean Energy Management, or BOEM), initiated Section 106 consultation in 2008.<sup>289</sup> Nearly two years after consultation began, the ACHP issued its comments to the Department of the Interior (DOI) regarding the proposed project.<sup>290</sup> According to the ACHP, the Cape Wind project threatens to adversely affect thirty-four historic properties, including sixteen historic districts and, most relevant to the analysis in this Section, six properties of cultural significance to the Wampanoag Tribes.<sup>291</sup> The ACHP claimed consultation with

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<sup>284</sup> *Id.* at 778.

<sup>285</sup> Rather than sending the project back to the beginning, this nullification essentially killed the project. For apparently unrelated reasons, the developer, Calpine, filed for bankruptcy in the intervening period between the trial court's decision and the Ninth Circuit's decision. *Id.* at 772.

<sup>286</sup> Schroeder, *supra* note 46, at 1637; Ziza, *supra* note 4, at 606.

<sup>287</sup> See Schroeder, *supra* note 46, at 1637.

<sup>288</sup> See Dorothy W. Bisbee, *NEPA Review of Offshore Wind Farms: Ensuring Emission Reduction Benefits Outweigh Visual Impacts*, 31 B.C. ENVTL. AFF. L. REV. 349, 367–69 (2004) (arguing that “[a]esthetic objections are the single most important impediment to wind farm siting”).

<sup>289</sup> ACHP COMMENTS, *supra* note 15, at 1; see Conger, *supra* note 117, at 753–58 (discussing the administrative and litigation challenges the Cape Wind project faced during its dozen-year permitting phase).

<sup>290</sup> ACHP COMMENTS, *supra* note 15, at 1; see also Kimmell & Stalenoef, *supra* note 4, at 209–11; Marinakos, *supra* note 266, at 98–101 (providing a timeline of regulatory and litigation actions in the development of the Cape Wind project).

<sup>291</sup> ACHP COMMENTS, *supra* note 15, at 1–2. One of the six properties of tribal significance is the bed of Nantucket Sound, itself. Kimmell & Stalenoef,

the Tribes was late and did not provide an adequate opportunity for the tribes to communicate concerns about the effects of Cape Wind on tribal cultural properties.<sup>292</sup> But the ACHP also noted that MMS took steps to remedy deficiencies in the process.<sup>293</sup> In April 2010, the ACHP recommended MMS not approve the project.<sup>294</sup> Less than a month later, the Secretary of the Interior approved the project over ACHP's recommended denial.<sup>295</sup>

#### 4. *Summary of Challenges to Recent Renewable Energy Projects on Federal Lands*

The *Quechan Tribe I* and *Pit River Tribe* cases illustrate the protection NHPA can afford tribal resources (and historic resources more generally) and the importance of NHPA's consultation provisions. In both cases, NHPA's procedural requirements protected sensitive tribal areas from the development of a large renewable energy project the federal government consulted the relevant tribe to understand the effects those projects were likely to impose on historic resources.

Yet as Cape Wind illustrates, Section 106's consultation provisions are procedural and do not dictate the outcome of a project in favor of preserving historic resources. In the Cape Wind project, DOI fulfilled its obligations to consult the ACHP and exercised its obligations to move forward with a project as proposed despite that project's putative adverse effects on historic resources. The consultation and review procedures for Cape Wind operated as intended under Section 106. NHPA can lead to informed decision making, but it cannot totally protect historic resources from a determined developer working with an accommodating federal agency.<sup>296</sup>

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*supra* note 4, at 209–11.

<sup>292</sup> ACHP COMMENTS, *supra* note 15, at 4.

<sup>293</sup> *Id.* at 5.

<sup>294</sup> *Id.*

<sup>295</sup> Subsequent litigation opposing the approval of the project does not raise NHPA claims. Shortly after the Secretary's decision, opponents to the project filed suit against BOEM, the federal agency authorizing the project to move forward. Cape Wind intervened on behalf of the defendants. The complaint alleged violations of the federal Endangered Species Act and the Migratory Bird Treaty Act. *See* Complaint, Pub. Emps. for Env'tl. Responsibility v. Bromwich, No. 1:10-cv-01067 (D.D.C. June 25, 2010).

<sup>296</sup> Federal agencies can impose mitigation measures that limit the effect of the undertaking. For instance, in *Te-Moak Tribe of W. Shoshone of Nev. v. U.S. Dep't of Interior*, 608 F. 3d 592, 601 (9th Cir. 2010), BLM identified certain sensitive historic areas as off-limits to development and required detailed surveys

B. *Is Historic Designation the Appropriate Mechanism for Protecting Large Seascapes That Are Likely To Be the Location for Offshore Wind Resource Development?*

Offshore wind projects present a novel and unmistakable presence on the maritime landscape.<sup>297</sup> Towers and turbines are tall, reaching hundreds of feet above the ocean surface, and numerous, usually totaling more than one hundred spread over many square miles to make a project economically viable.<sup>298</sup> Combined with the lack of other relief or other permanent visual obstructions in otherwise planar maritime viewsheds, wind projects unavoidably alter seascape views.<sup>299</sup> The site plan for the Cape Wind project, introduced above, exhibits many of these attributes of offshore wind projects.<sup>300</sup> Atlantic offshore wind has one advantage over terrestrial analogs from the high plains and Midwest: prime Atlantic offshore wind resources are mere dozens of miles from the country's heaviest load centers from Washington to Boston, whereas those same load centers are thousands of miles from the wind-rich high plains.<sup>301</sup>

Initially proposed in 2001, Cape Wind has withstood numerous legal challenges, regulatory and price uncertainty, and opposition from neighboring communities and tribes as well as opposition from groups supported by the oil-and-gas industry.<sup>302</sup> In late 2009, as the project was progressing towards construction, the

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to ensure resources did not exist in other areas. Development could proceed only if those surveys revealed no historic resources. *Te-Moak*, 608 F. 3d at 601.

<sup>297</sup> Bisbee, *supra* note 288, at 367–68.

<sup>298</sup> Schroeder, *supra* note 46, at 1649.

<sup>299</sup> Bisbee, *supra* note 288, at 368.

<sup>300</sup> Schroeder, *supra* note 46, at 1649–50.

<sup>301</sup> However, offshore wind transmission lines still face high costs and numerous obstacles to completion. See Nathaniel C. Giddings, *Go Offshore Young Man! The Categorical Exclusion Solution to Offshore Wind Farm Development on the Outer Continental Shelf*, 2 J. ENERGY & ENVTL. L. 75, 76–77 (2011); Kimmell & Stalenhoef, *supra* note 4, at 199; Schroeder, *supra* note 46, at 1640.

<sup>302</sup> See Marinakos, *supra* note 266, at 88–94 (describing the coalition of opponents to the Cape Wind project). The Board of Directors for the Alliance to Protect Nantucket Sound, party in multiple challenges to the Cape Wind project, includes Bill Koch, one of the billionaire Koch brothers closely associated with numerous conservative causes. See *Our Board*, ALLIANCE TO PROTECT NANTUCKET SOUND, [http://www.saveoursound.org/about\\_us/board\\_of\\_directors/](http://www.saveoursound.org/about_us/board_of_directors/) (last visited May 17, 2011). It is at least an open question whether some of the procedural challenges and litigation directed at Cape Wind were to protect resources or whether they were to stop the project. See also *supra* note 113.

then-lead federal agency, MMS (now BOEM) submitted a request to the National Park Service (NPS) to determine the eligibility of Nantucket Sound for inclusion on the NRHP.<sup>303</sup> In January 2010, the NPS confirmed Nantucket Sound was eligible for inclusion on the NRHP pursuant to historic designation regulations.<sup>304</sup> Nantucket Sound is the first marine water body to be deemed eligible for the NRHP.<sup>305</sup> However, listing in the NRHP is arguably inappropriate for maritime and estuarine water bodies given the size and lack of clear boundaries inherent in such water features. This Section examines (1) the criteria for designating landscapes as historic places and (2) whether the criteria for designating landscapes is appropriately applied to historic maritime landscapes.

### 1. *NRHP Designation Criteria*

The criteria for evaluating a property's fitness for the NRHP are given by NPS regulation,<sup>306</sup> which the NPS further clarifies through a number of informal guidance documents the NPS produces and refers to as "bulletins."<sup>307</sup>

A property may be eligible for listing if (1) it is "associated with events that have made a significant contribution to the broad patterns of our history"; (2) it is "associated with the lives of persons significant in our past"; (3) it "embod[ies] the distinctive characteristics of a type, period, or method of construction"; or (4)

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<sup>303</sup> See Timothy H. Powell, *Revisiting Federalism Concerns in the Offshore Wind Energy Industry in Light of Continued Local Opposition to the Cape Wind Project*, 92 B.U. L. REV. 2023, 2039 (2012).

<sup>304</sup> Letter from U.S. Dep't of the Interior, Nat'l Park Serv., to Christopher E. Horrell, Fed. Pres. Officer, MMS, (Jan. 4, 2010), available at <http://nps.gov/nr/publications/guidance/NantucketSoundDOE.pdf> [hereinafter *Nantucket Determination*]. Eligibility for listing on the NRHP is determined by NPS's regulations. See 36 C.F.R. § 60.4.

<sup>305</sup> Beth Daley, *More than Cape Wind Affected by Historic Label*, BOSTON GLOBE, Jan. 6, 2010, [http://www.boston.com/news/local/massachusetts/articles/2010/01/06/historic\\_label\\_for\\_nantucket\\_sound\\_could\\_affect\\_more\\_than\\_cape\\_wind](http://www.boston.com/news/local/massachusetts/articles/2010/01/06/historic_label_for_nantucket_sound_could_affect_more_than_cape_wind). Nantucket Sound is not the first water body of any kind to be found eligible for listing, however; bodies such as Walden Pond are listed in the NRHP. See Abby Goodnough, *For Controversial Wind Farm Off Cape Cod, Latest Hurdle Is Spiritual*, N.Y. TIMES Jan. 5, 2010, at A11.

<sup>306</sup> See 36 C.F.R. § 60.4.

<sup>307</sup> See, e.g., U.S. DEP'T OF THE INTERIOR, NAT'L PARKS SERV., NATIONAL REGISTER BULLETIN: GUIDELINES FOR EVALUATING AND DOCUMENTING TRADITIONAL CULTURAL PROPERTIES (1998) [hereinafter *TCP BULLETIN*], available at <http://www.nps.gov/NR/publications/bulletins/nrb38/>; see also Kuntz, *supra* note 6, at 326 (discussing National Parks Service bulletins).

it has “yielded, or may be likely to yield, information important in prehistory or history.”<sup>308</sup>

In addition to meeting one or more of these criteria, a property must have “integrity” to be eligible for listing.<sup>309</sup> According to NPS guidance, “[i]ntegrity is the ability of a property to convey its significance.”<sup>310</sup> Elements of integrity are “location, design, setting, materials, workmanship, feeling, and association.”<sup>311</sup> A property need not fulfill its integrity requirements for each element, and no single integrity criterion is determinative. However, it is crucial that a property have integrity with respect to the element(s) for which it is significant.<sup>312</sup> For example, if a building is significant because of its location, but the building has been relocated to a new site, it lacks integrity of location.<sup>313</sup>

## 2. *Appropriateness of Existing Criteria for Maritime Landscapes*

As noted above, Nantucket Sound is the first maritime body of water to be designated as eligible for the NRHP.<sup>314</sup> In its determination of eligibility, the NPS examined the Sound according to each of the four codified criteria and articulated reasons why each criterion applied.<sup>315</sup> The NPS also examined the Sound according to its bulletin governing designation of Traditional Cultural Properties (TCP Bulletin).<sup>316</sup> The TCP Bulletin applies the “integrity” component of an eligibility designation as “[the property’s importance of] maintaining the

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<sup>308</sup> 36 C.F.R. § 60.4.

<sup>309</sup> *Id.*

<sup>310</sup> See U.S. DEP’T OF THE INTERIOR, NAT’L PARKS SERV., NATIONAL REGISTER BULLETIN: HOW TO APPLY THE NATIONAL REGISTER CRITERIA FOR EVALUATION, at 44 (1995) [hereinafter NRHP CRITERIA], available at <http://www.nps.gov/nr/publications/bulletins/pdfs/nrb15.pdf>.

<sup>311</sup> 36 C.F.R. § 60.4.

<sup>312</sup> See NRHP CRITERIA, *supra* note 310, at 44.

<sup>313</sup> See *id.* (“Except in rare cases, the relationship between a property and its historic associations is destroyed if the property is moved.”).

<sup>314</sup> Nelson Sigelman, *Secretary Salazar Approves Cape Wind Project in Sound*, MARTHA’S VINEYARD TIMES, Feb. 25, 2010, <http://www.mvtimes.com/secretary-salazar-approves-cape-wind-project-sound-555>; see also *National Register of Historic Places Download Center*, NAT’L PARK SERV., <http://nrhp.focus.nps.gov/natreg/docs/Download.html#all> (click the FED DOE.xls hyperlink under “Finding Aids”) (providing a list of all historic buildings, districts, sites, structures and objects listed in the NRHP).

<sup>315</sup> Nantucket Determination, *supra* note 304, at 2.

<sup>316</sup> *Id.* at 4.

continuing cultural identity of the community.”<sup>317</sup> In the instance of Nantucket Sound, the determination of eligibility declared that the Sound maintained its identity and therefore its integrity.<sup>318</sup>

One distinguished historic preservation law commentator has noted that no reported decision of any court has ever overturned an eligibility determination of the NPS.<sup>319</sup> The NPS is thus afforded great deference in making its determinations. However, one could at least argue that the NPS erred in declaring the Nantucket Sound eligible for designation because centuries’ worth of changing conditions have impaired the integrity of the Sound.<sup>320</sup> First, the Sound has undergone enormous physical changes; before sea levels rose to their current elevations after the last ice age, now-subaqueous portions of the Sound were then subaerial.<sup>321</sup> Second, the Sound has changed in other important ways and now accommodates modern seagoing vessels (ferries, barges, and pleasure craft) that were unfathomable for much of the Tribe’s association with the body. The Sound also accommodates buoys, radio towers, and its coast is lined with relatively modern artificial lights and structures. Indeed, the Sound has experienced ecosystem changes and levels of pollution that have led to portions of the Sound being placed on Massachusetts’ Section 303(d) list of impaired waters.<sup>322</sup>

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<sup>317</sup> TCP BULLETIN, *supra* note 307, at 1.

<sup>318</sup> Nantucket Determination, *supra* note 304, at 4.

<sup>319</sup> BRONIN & BYRNE, *supra* note 83, at 66.

<sup>320</sup> Danielle E. Horgan, *Reconciling the Past with the Future: The Cape Wind Project and the National Historic Preservation Act*, 36 VT. L. REV. 409, 421 (2011) (advocating ultimately for the dismissal of litigation opposing Cape Wind on historic preservation grounds).

<sup>321</sup> L.J. POPPE ET AL., U.S. GEOLOGICAL SURVEY, SEA-FLOOR GEOLOGY AND SEDIMENTARY PROCESSES IN THE VICINITY OF CROSS RIP CHANNEL, NANTUCKET SOUND, OFFSHORE SOUTHEASTERN MASSACHUSETTS: OPEN-FILE REPORT 2011-1222 (2012), available at <http://pubs.usgs.gov/of/2011/1222/html/setting.html> (“The Holocene rise in sea level has conspicuously altered the geology and morphology of Nantucket Sound.”). See generally B.T. Gutierrez et al., *Relative Sea-Level Rise and the Development of Valley-Fill and Shallow-Water Sequences in Nantucket Sound, Massachusetts*, 193 MARINE GEOL. 295 (2003) (describing physical changes to Nantucket Sound).

<sup>322</sup> See MASS. DEP’T. OF ENVTL. PROT., DIV. OF WATERSHED MGMT., WATERSHED PLANNING PROGRAM, MASSACHUSETTS YEAR 2010 INTEGRATED LIST OF WATERS 177–78 (2011), available at <http://www.mass.gov/dep/water/resources/10list6.pdf>; MASS. DEP’T OF ENVTL. PROT., BUREAU OF RES. PROT., NANTUCKET HARBOR EMBAYMENT SYSTEM: TOTAL MAXIMUM DAILY LOADS FOR TOTAL NITROGEN 2 (2009), available at [http://www.epa.gov/waters/tmdl/docs/36012\\_Nantucket%20Report.pdf](http://www.epa.gov/waters/tmdl/docs/36012_Nantucket%20Report.pdf).

The extent to which modern forces have diminished the historical integrity of the Sound for the Tribes' purposes is a matter the Tribes alone are best suited to address. But the extent to which the Sound receives protections under federal historic preservation law is a matter for public debate. NRHP listing is arguably not the most appropriate designation for the Nantucket Sound specifically and other historic bodies of water generally. One reason NRHP listing is generally inappropriate for marine bodies of water is marine areas are not "properties" in the same sense that terrestrial landscapes are.<sup>323</sup> The NPS's determination of eligibility for Nantucket Sound acknowledged as much, stating, "the exact boundary is not precisely defined."<sup>324</sup> Identifying adverse impacts on an undefined, featureless water body tends toward arbitrariness. NRHP listing is also inappropriate because the federal executive branch has other landscape designation tools such as National Historic Landmarks or Marine Protected Areas at its disposal to protect marine resources from inappropriate use.<sup>325</sup> Alternatively, Congress could pass legislation either authorizing designation criteria for historic marine bodies or expressly identifying historic marine or estuarine bodies such as Nantucket Sound, Pamlico Sound, San Francisco Bay, the Hudson River, Mobile Bay, and others.

But as ACHP applied the NRHP designation to the Nantucket Sound, it is likely to apply such designation to other seascapes. NRHP designation is inappropriate for featureless and boundary-less maritime bodies of water. Another historic preservation

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<sup>323</sup> Properties with large areas are considered "districts" under the NRHP designation criteria. See NRHP CRITERIA, *supra* note 310, at 4. However, Nantucket Sound fails to comport to the standards of a district either. See *id.* at 6 ("A district must be a definable geographic area that can be distinguished from surrounding properties . . . . The boundaries must be based upon a shared relationship among the properties constituting the district.").

<sup>324</sup> Nantucket Determination, *supra* note 304, at 4.

<sup>325</sup> See generally Donald C. Baur et al., *Putting "Protection" into Marine Protected Areas*, 28 VT. L. REV. 497 (2004) (discussing Nantucket Sound in the context of federal Marine Protected Areas designation). However, even other designation tools (e.g., the Antiquities Act) are poorly equipped to deal with conservation of marine resources insofar as those tools were designed for terrestrial conservation. See generally Mark Laemmle, *Monumentally Inadequate: Conservation at Any Cost under the Antiquities Act*, 21 VILL. ENVTL. L.J. 111 (2010) (arguing against the use of the Antiquities Act to protect marine areas for many of the reasons given above). An important difference between NRHP designation and Marine Protected Areas designation is that the latter has a history of protecting maritime bodies dating back to the 1930s, whereas the first such use under the former was in 2010. *Id.* at 112.

designation system should be used, or a new system with more appropriate designation criteria should be developed.

C. *Historic Preservation and Utility-Scale Renewable Energy: Synthesis and Recommendations*

As discussed, NHPA is at its core an information-gathering statute. It does not dictate substantive, specific outcomes with respect to specific projects. Rather it requires that federal agencies with jurisdiction over a specific project meet certain consultation and analysis requirements. Consultation with tribal governments is among the most important of these procedural, information-gathering requirements when tribal historic resources are implicated. When the agency with jurisdiction over a project adheres to NHPA's requirements, the results are almost universally superior from a historic preservation perspective than when those requirements are ignored. Private sector energy developers and agency officials with a mandate to be responsive to those developers in order to achieve the administration's energy policy goals have an incentive to circumvent NHPA's requirements. The incentive exists because consultation and information gathering can increase costs or slow a project down.<sup>326</sup>

Formal designation of historic resources in the NRHP, which is related to NHPA's information-gathering mandate, can also lead to conflicts. Although designation is largely ceremonial and does not conclusively preclude future development, designation can have a chilling effect that developers would like to avoid.<sup>327</sup> If nothing else, designation heightens public awareness about the significance of a historic resource, providing symbolic significance that opponents to a project might rally around.<sup>328</sup>

This Section further considers these potential sources of conflict, examines methods of conflict resolution from the municipal land use context, and concludes with recommendations to reconcile the objectives of historic preservation with those of renewable energy development when land use conflicts occur.

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<sup>326</sup> Kochan, *supra* note 117, at 408.

<sup>327</sup> See Phelps, *supra* note 33, at 138–42 (describing emerging resistance and popular opposition to historic designation).

<sup>328</sup> See Kimmell & Stalenhoef, *supra* note 4, at 210 (noting that Nantucket Sound's designation in the NRHP “emboldened” opponents of the Cape Wind project).

### 1. *Incomplete Resource Protection and Continued Conflicts*

Without administrative changes, renewable energy projects on federal lands and in federal waters will continue to conflict with historic resources. Moreover, project developers will likely continue to seek to minimize or circumvent the pre-construction historic impact review process.<sup>329</sup> Ultimately, even if federal agencies scrupulously adhere to NHPA's requirements, historic resources may go unprotected because NHPA only dictates a process and does not impose substantive protections.<sup>330</sup>

The adverse environmental effects of utility-scale solar, geothermal, and wind projects on historic resources are almost certainly less severe and less irreversible than the effects of conventional power facilities.<sup>331</sup> Nevertheless, the visual adverse effects are very real, and are likely to grow as projects cover more area and become more numerous.<sup>332</sup>

New utility-scale renewable energy projects are also

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<sup>329</sup> See Giddings, *supra* note 301, at 78 (advocating for a categorical exclusion under NEPA for offshore wind projects and describing the benefits of "streamlining" such projects).

<sup>330</sup> See Pianca, *supra* note 105, at 487–88.

<sup>331</sup> Gillette et al., *supra* note 3 at 50; Sovacool, *supra* note 11. For instance, renewable energy projects are less intensive uses of the land and emit less local pollution than conventional power generators such as coal-fired and nuclear power plants. *Id.*; see also Conger, *supra* note 117, at 746 (detailing the environmental benefits of wind as compared to conventional fuel sources); RANDY T. SIMMONS & RYAN M. YONK, ENERGY IN NATIONAL MONUMENTS (2013) (providing examples of the effects of nonrenewable and renewable energy sources in National Monuments).

<sup>332</sup> See, e.g., Erin Ailworth, *First Wind Sees Setbacks in Maine*, BOSTON GLOBE, June 21, 2014, <http://www.bostonglobe.com/business/2014/06/20/first-wind-sees-setbacks-maine-progress-utah/2JJrxFdw4bxhYB4hEuDbL/story.html> (describing the denial of permits for wind turbines on the grounds that the turbines "would adversely affect the views around nine scenic lakes considered of 'state or national significance'"); Pizzo, *supra* note 266. Renewable energy projects disturb landscapes during construction, spread permanent physical alterations over hundreds to thousands of acres, and introduce foreign objects into historic landscapes and seascapes. See Simon Clarke, *Balancing Environmental and Cultural Impact Against the Strategic Need for Wind Power*, 15 INT'L J. HERITAGE STUD. 175, 178–84 (2009) (describing the adverse environmental and aesthetic effects of wind farms and the need to balance such harms against global atmospheric changes); Maarten Wolsink, *Wind Power Implementation: The Nature of Public Attitudes: Equity and Fairness Instead of "Backyard Motives"*, 11 RENEWABLE & SUSTAINABLE ENERGY REV. 1188, 1194 (2007) (finding that popular opposition to wind projects generally centers on the visual impacts of turbines on landscapes, particularly landscapes considered scenic or otherwise culturally significant).

developing on short timelines.<sup>333</sup> Whereas utility-owned projects passed capital costs onto ratepayers and therefore could afford to move as slowly as state public utility commissions allowed, with investor-led renewable utility projects, equity holders are highly incentivized to seek a return on their capital as quickly as possible. The fast-track approach to project development creates a tension with historic resource review, which almost necessarily dictates iterative consultation and analysis.

Continued conflicts between renewable energy projects and historic resources seem likely given the existing market and policy conditions. NHPA's information-gathering and consultation requirements cannot prevent a project from being developed, provided the lead federal agency adheres to the regulatory requirements. Ultimately, NHPA cannot dictate outcomes that protect historic resources from the effects of new development because it cannot impose substantive obligations on federal agencies to protect historic resources.<sup>334</sup> At best, preservationists can ensure that an agency is informed about what it plans to disturb, and hope that the agency weighs competing interests fairly and requires mitigation for any impacts on historic resources.<sup>335</sup>

## 2. *The "Zoning" Approach: Spatial Designations Can Separate Incompatible Land Uses*

To address concerns regarding the adequacy of procedural historic preservation review and designation, preservation advocates should look to Euclidean zoning.<sup>336</sup> Zoning has helped

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<sup>333</sup> See AM. WIND ENERGY ASS'N & SOLAR ENERGY INDUS. ASS'N, *supra* note 25, at 6.

<sup>334</sup> See MacGill, *supra* note 22, at 706 (describing the limitations of NHPA and its lack of substantive procedures to protect historic assets).

<sup>335</sup> As the Cape Wind case illustrates, when a federal agency follows NHPA's procedures and the project has merit, the project can proceed even in the face of adverse effects to nearby historic resources. Not even formal designation of a historic landscape in the NRHP can forestall development. Horgan, *supra* note 320, at 418 ("[N]either section 106, nor the NHPA as a whole, requires that a project be abandoned in the event that it adversely affects a registered or eligible historic landmark. Indeed 'Section 106 encourages, but does not mandate, preservation.'").

<sup>336</sup> "Euclidean" zoning is so named after the city of Euclid, Ohio, which was one of the key parties in the Supreme Court case determining the validity of zoning for different land uses. See *Euclid v. Ambler*, 272 U.S. 365 (1926). Euclidean zoning defines zones on the basis of land use thereby separating potential land use conflicts. See Jonathan E. Cohen, *A Constitutional Safety Valve: The Variance in Zoning and Land-Use Based Environmental Controls*, 22 B.C. ENVTL. AFF. L. REV. 307, 330 (1995).

protect historic resources in the local land use context, and it offers lessons for protecting historic resources on federal lands and in federal waters. Strong parallels exist between conflicting interests over historic resources in the municipal land use context and conflicting interests over federal land use.<sup>337</sup>

Federal lands dealing with competing land uses are ripe for zoning.<sup>338</sup> Three lessons from zoning are applicable to historic preservation and energy development on federal lands: (1) designating historic zones with substantive protections for historic resources and exceptions for new developments of “special merit” separates incompatible uses but allows some flexibility; (2) a public process for making land use decisions on federal lands can avoid disputes winding up in court after federal agencies make a decision; and (3) nascent zoning-like policies on federal lands are providing test cases for a more robust framework.

a. *Historic Zone Districts and the Special Merit Exception*

Numerous municipalities designate historic zones, in which special historic preservation-oriented rules apply to new development.<sup>339</sup> In such historic zone districts, aesthetic controls are often more stringent about the form of new development than in non-historic districts.<sup>340</sup> Such stringency in protecting historic fabric arises from the recognition that the visual effects of new development are frequently the most significant adverse impact on historic resources.<sup>341</sup>

Occasionally, however, the benefits of a new development in a historic zone or directly affecting a historic resource will be uniquely well suited for that particular location, such that it is in the public interest to relax the historic preservation restrictions to

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<sup>337</sup> See generally Josh Eagle, *The Practical Effects of Delegation: Agencies and the Zoning of Public Lands and Seas*, 35 PEPP. L. REV. 835 (2008).

<sup>338</sup> Municipal zoning laws do not apply on federal lands, and zoning certainly does not limit uses of federally controlled areas offshore. See, e.g., *Groton v. Laird*, 353 F. Supp. 344, 350 (D. Conn. 1972) (noting that the federal government is exempt from municipal zoning law). See generally Robin Kundis Craig, *Treating Offshore Submerged Lands as Public Lands: An Historical Perspective*, 34 PUB. LAND & RESOURCES L. REV. 51 (describing federal control over offshore areas).

<sup>339</sup> Phelps, *supra* note 33.

<sup>340</sup> See *id.* at 134–36. See generally Carol M. Rose, *Preservation and Community: New Directions in the Law of Historic Preservation*, 33 STAN. L. REV. 473, 489–91 (1980).

<sup>341</sup> Phelps, *supra* note 33, at 134–36; see also Byrne, *supra* note 37, at 682 (discussing the role of historic preservation in aesthetic regulation).

accommodate a single new development. Some jurisdictions balance the public interest in historic preservation with the benefits of a new project through “variances” or “special exceptions.”<sup>342</sup> Washington, DC—among the country’s richest troves of historic resources—relaxes its otherwise stringent historic preservation laws only for projects of “special merit,” which allows new projects with unique public benefits to proceed despite adverse effects on historic resources.<sup>343</sup> Special merit is defined as “a plan or building having significant benefits to the District of Columbia or to the community by virtue of (1) exemplary architecture, (2) special features of land planning, or (3) social or other benefits having a high priority for community services.”<sup>344</sup> Moreover, special merit determinations are truly unique, and are intended to be an “escape valve for a narrow category of situations in which the proposed construction or other amenities offered as some ‘special benefits’ to the overall community, could override the contributions made by any structure which the [District’s historic preservation review board] has already determined should be preserved.”<sup>345</sup>

One benefit of zoning is that it serves to confer an entitlement on potential developers, thereby reducing some pre-development risk. A developer can be certain that within designated areas its proposed project can go forward.<sup>346</sup> Designating historic zones and using the special merit concept for unique proposed projects within those areas provides a template for protecting the most important

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<sup>342</sup> Phelps, *supra* note 33, at 133; *see also* Cohen, *supra* note 336.

<sup>343</sup> *See* J. Peter Byrne, *Regulatory Takings Challenges to Historic Preservation Laws After Penn Central*, 15 FORDHAM ENVTL. L. REV. 313, 320–21 (2004) (discussing important special merit cases in Washington, D.C.); Elizabeth Wohlken Rugaber, *The Special Merit Exemption Under D.C.’s Historic Preservation Act: An Analysis of 20 Years of Application and Suggestions for the Future* 2–3 (May 14, 2002), [http://scholarship.law.georgetown.edu/cgi/viewcontent.cgi?article=1007&context=hpps\\_papers](http://scholarship.law.georgetown.edu/cgi/viewcontent.cgi?article=1007&context=hpps_papers).

<sup>344</sup> D.C. CODE § 6-1102(11) (2013). Special merit determinations are fact intensive and made by a specially appointed administrator. *Id.*

<sup>345</sup> *In re* Application for Demolition of the Webster School and for New Construction, HPA No. 00-462 (Feb. 15, 2001) *available at* [https://www.law.georgetown.edu/library/collections/histpres/get-document.cfm?id\\_no=27&display=text](https://www.law.georgetown.edu/library/collections/histpres/get-document.cfm?id_no=27&display=text).

<sup>346</sup> *See* Kimmell & Stalenhoef, *supra* note 4, at 214–15 (describing also the lack of assurance renewable energy developers confront that they will actually receive the necessary permits, especially in light of the lengthy regulatory delays Cape Wind has faced); *see also* James N. Sanchirico et al., *Comprehensive Planning, Dominant-Use Zones, and User Rights: A New Era in Ocean Governance*, 86 BULL. MARINE SCI. (2010).

historic resources while allowing some flexibility for new development.

b. *Public Process in Zoning and Land Use Decisions*

A second lesson to be learned from municipal zoning practice can be drawn from the rich tradition of public process in land use decision making. Perhaps because land use decisions generally have the strongest effects on a local level, the land use political process is one that skews significantly towards local political institutions and citizen involvement.<sup>347</sup> Citizens, rather than career bureaucrats, generally make local land use decisions.<sup>348</sup> Other interested citizens can participate in the local decision-making process either informally or formally, and citizen involvement or public participation is a hallmark of zoning and land use policymaking.<sup>349</sup>

Policymaking surrounding federal lands is decidedly less participatory than land use decision making generally,<sup>350</sup> but this need not be the case. Federal land management officials could draw heavily from local land use public participation processes to reduce conflicts over historic and renewable energy resources on federal lands.

c. *Nascent Public Lands Zoning*

Conflicts over competing uses for public lands are not new

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<sup>347</sup> See Orlando E. Delogu, *supra* note 27, at 16 (describing the strengthening of local control of land use); Bradley C. Karkkainen, *Zoning: A Reply to the Critics*, 10 J. LAND USE & ENVT'L. L. 45, 56 n.141-42 (1994); Garrick B. Pursely & Hannah J. Wiseman, *Local Energy*, 60 EMORY L.J. 877, 907-8 (2010); Carol M. Rose, *Planning and Dealing: Piecemeal Land Controls as a Problem of Local Legitimacy*, 71 CAL. L. REV. 837, 842-43 (1983)

<sup>348</sup> See Jerry L. Anderson et al., *A Study of American Zoning Board Composition and Public Attitudes Toward Zoning Issues*, 40 URB. LAW. 689, 701-05 (2008) (describing the results of a large multi-state survey finding that members of municipal zoning bodies tend to be white collar professionals); see also Eagle, *supra* note 337 at 847.

<sup>349</sup> See Jerrold A. Long, *Private Lands, Conflict, and Institutional Evolution in the Post-Public-Lands West*, 28 PACE ENVTL. L. REV. 670, 681-83 (2011); Janice K. Tulloss, *Citizen Participation in Boston's Development Policy: The Political Economy of Participation*, 30 URB. AFF. REV. 514, 514 (1995); Daren C. Brabham, *Crowdsourcing the Public Participation Process for Planning Projects*, 8 PLAN. THEORY, 242, 243 (2009).

<sup>350</sup> Gail L. Achterman & Sally K. Fairfax, *The Public Participation Requirements of the Federal Land Policy and Management Act*, 21 ARIZ. L. REV. 501, *passim* (1979); Lloyd C. Irland & J. Ross Vincent, *Citizen Participation in Decision Making: A Challenge for Public Land Managers*, 27 J. RANGE MGMT. 182, 182 (1974).

and are not unique to renewable energy and historic preservation.<sup>351</sup> The Obama Administration has recognized that renewable energy resources present possible conflicts and has increased efforts to engage in zoning-like policies for federal lands. In May 2011, BLM introduced a draft plan for adopting a zone-based approach to siting utility-scale solar projects on federal lands.<sup>352</sup> During the summer of 2012, DOI finalized a programmatic environmental impact statement (PEIS) to speed the development of solar projects on federal lands in California, Nevada, Arizona, Utah, Colorado, and New Mexico.<sup>353</sup> The PEIS studied nearly three hundred thousand acres and is expected to result in solar energy zones that accommodate twenty-four thousand megawatts of new solar capacity, or many times the total domestic solar capacity.<sup>354</sup> The PEIS draws heavily on the “zone” concept. It delineates prime solar generation areas on federal lands in the aforementioned six states, and seeks to balance the impact on cultural and biological resources by excluding from potential development the most sensitive areas.<sup>355</sup> Detailed planning for solar development on these federal lands is underway.<sup>356</sup>

In December 2009, Massachusetts became the first state to

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<sup>351</sup> See Outka, *supra* note 3, at 252; see also Josh Eagle, *The Practical Effects of Delegation: Agencies and the Zoning of Public Lands and Seas*, 35 PEPP. L. REV. 835, 853-54 (2008) (advocating for “uniform-use” zones rather than multi-use zones); Scott Streater, *BLM Approves New Solar, Geothermal Development Plan in Calif. Desert*, E&E NEWS (Aug. 14, 2013), <http://www.eenews.net/stories/1059986013> (discussing possible conflicts between solar and geothermal developments on federal lands and competing environmental and military uses).

<sup>352</sup> See *Solar Energy Zones*, SOLAR ENERGY DEV. PROGRAMMATIC EIS INFO. CENTER, <http://solareis.anl.gov/sez/index.cfm> (last visited May 17, 2011); James Navarro, *Solar Energy Zones: The Smart Place to Start*, DEFENDERS OF WILDLIFE BLOG (May 2, 2011), <http://www.defendersblog.org/2011/05/solar-energy-zones-the-smart-place-to-start/>.

<sup>353</sup> BUREAU OF LAND MGMT. & DEP’T OF ENERGY, FINAL PROGRAMMATIC ENVIRONMENTAL IMPACT STATEMENT FOR SOLAR ENERGY DEVELOPMENT IN SIX SOUTHWESTERN STATES: EXECUTIVE SUMMARY (2012), available at [http://solareis.anl.gov/documents/fpeis/Solar\\_FPEIS\\_ExecutiveSummary.pdf](http://solareis.anl.gov/documents/fpeis/Solar_FPEIS_ExecutiveSummary.pdf).

<sup>354</sup> *Id.* at ES-13, ES-17; see also Outka, *supra* note 3, at 252–53.

<sup>355</sup> See BUREAU OF LAND MGMT. & DEP’T OF ENERGY, *supra* note 353, at ES-10.

<sup>356</sup> See Press Release, Dep’t of the Interior Secretary Jewell Underscores Importance of Landscape-Level Approach, Mitigation in Meeting President’s Renewable Energy Goals on Public Lands (Aug. 13, 2013), available at <http://www.doi.gov/news/pressreleases/secretary-jewell-underscores-importance-of-landscape-level-approach-mitigation-in-meeting-presidents-renewable-energy-goals-on-public-lands.cfm>.

adopt an Ocean Management Plan.<sup>357</sup> The plan identified important ecological, economic, historic, recreational, geophysical, and energy resource areas.<sup>358</sup> It sought to impose a Euclidean-like zoning scheme to state-controlled maritime waters.<sup>359</sup> Almost at the same time, the CEQ released its “Interim Framework for Coastal and Marine Spatial Planning.”<sup>360</sup> The Framework is the first step in establishing national-scale spatial and resource plans, and may help avoid the delays Cape Wind experienced for projects that occur in federal waters.<sup>361</sup>

### 3. Recommendations

The problems that emerged in the Cape Wind, *Quechan Tribe I*, and *Pit River Tribe* cases could be avoided through advanced agency planning or via legislative intervention.

a. *Engage in Stakeholder-Led Spatial Planning To Designate Historic Resource and Energy Development Zones on Federal Lands and in Federal Waters*

One solution to avoid or address conflicts on federal lands is to bring stakeholders together as soon as possible to identify and

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<sup>357</sup> MASS. EXEC. OFFICE OF ENERGY & ENVTL. AFF., MASSACHUSETTS OCEAN MANAGEMENT PLAN (Dec. 2009), available at <http://www.env.state.ma.us/eea/mop/final-v1/v1-complete.pdf>; see also Morgan Gopnik et al., *Coming to the Table: Early Stakeholder Engagement in Marine Spatial Planning*, 36 MARINE POL’Y 1139 (2012); Kimmell & Stalenhoef, *supra* note 4, at 213–14.

<sup>358</sup> MASS. EXEC. OFFICE OF ENERGY & ENVTL. AFF., *supra* note 357, at 1-3. Notably the Ocean Management Plan identifies protected “sanctuary” areas where no human activities are permitted; renewable energy areas for wind, wave and tidal power; and multi-use areas, where sediment mining, shellfishing, and a variety of other uses are permitted. See *id.* at 2-1 to 2-3.

<sup>359</sup> See *id.* at 3-2 to 3-10 (depicting zones where various offshore uses are prohibited or allowed). See generally Sue Kidd & Geraint Ellis, *From the Land to Sea and Back Again? Using Terrestrial Planning to Understand the Process of Marine Spatial Planning*, 14 J. ENVTL. POL’Y & PLAN. 49 (2012) (describing parallels between land use planning and burgeoning ocean zoning paradigms).

<sup>360</sup> WHITE HOUSE COUNCIL ON ENVTL. QUALITY, INTERIM FRAMEWORK FOR EFFECTIVE COASTAL AND MARINE SPATIAL PLANNING (2009), [hereinafter INTERIM FRAMEWORK] available at <http://www.whitehouse.gov/sites/default/files/microsites/091209-Interim-CMSP-Framework-Task-Force.pdf>. This framework served as the basis for a document issued a year later setting forth a national policy for ocean and coastal areas that called for extensive spatial planning in offshore areas to better manage those areas for, inter alia, renewable energy development as well as maritime heritage and archeology preservation. See WHITE HOUSE COUNCIL ON ENVTL. QUALITY, FINAL RECOMMENDATIONS OF THE INTERAGENCY OCEAN POLICY TASK FORCE 32, 42 (2010), available at [http://www.whitehouse.gov/files/documents/OPTF\\_FinalRecs.pdf](http://www.whitehouse.gov/files/documents/OPTF_FinalRecs.pdf).

<sup>361</sup> See INTERIM FRAMEWORK, *supra* note 360, at 7.

prioritize sensitive historic resource areas and prime energy generation areas via a spatially-informed planning process that approximates zoning.<sup>362</sup> In each of the three cases involving tribal conflicts examined above, the consultation failures under NHPA might have been largely avoided via a multi-stakeholder, agency-led spatial planning exercise early in the project's conception.<sup>363</sup> While each party engaged in the process may not achieve each of its preferred outcomes, geography-based planning will allow for prioritization and compromise. Consensus-built spatial planning is essential in identifying the sensitive "off-limits" sites for preservationists and the commercially valuable "must-build" sites for the developers.<sup>364</sup>

- b. *Allow Federal Land Agencies To Adopt Substantive Protections for Historic Resources, but Couple Those Protections with a "Special Merit" Exception To Allow for New Development in Historic Areas Under Certain Pre-Defined Conditions*

NHPA's procedural requirements are inadequate to protect historic resources on federal lands and in federal waters. Federal agencies applying NHPA in such areas should be empowered—via an executive order or via a reassessment of NHPA's Section 110<sup>365</sup>—to impose substantive protections on historic resources on

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<sup>362</sup> See SUSAN F. TIERNEY & STEPHEN CARPENTER, PLANNING FOR OFFSHORE ENERGY DEVELOPMENT: HOW MARINE SPATIAL PLANNING COULD IMPROVE THE LEASING/PERMITTING PROCESSES FOR OFFSHORE WIND AND OFFSHORE OIL/NATURAL GAS DEVELOPMENT (2013).

<sup>363</sup> See Alexander, *supra* note 79, at 914–15 (identifying ways to engage tribes in historic preservation review: either by incorporating tribal input into the agency's general operations or by engaging in consultations on a project-by-project basis). Agencies with questions about how best to engage the tribes in planning should look at the information promulgated by the tribes themselves. See SHERRY HUTT & JAIME LAVALLEE, NAT'L ASS'N OF TRIBAL HISTORIC PRES. OFFICERS, TRIBAL CONSULTATION: BEST PRACTICES IN HISTORIC PRESERVATION (2005), available at [http://www.nathpo.org/PDF/Tribal\\_Consultation.pdf](http://www.nathpo.org/PDF/Tribal_Consultation.pdf).

<sup>364</sup> See Paddock & Colasuonno, *supra* note 109, at 623 (discussing the benefits of using spatial planning to identify natural resource areas and energy resource areas to avoid or minimize conflicts between the two). See generally, Sean F. Nolon, *The Lawyer as Process Advocate: Encouraging Collaborative Approaches to Controversial Development Decisions*, 27 PACE ENVTL. L. REV. 103, *passim* (2009) (discussing collaborative management processes to address land use conflicts).

<sup>365</sup> Section 110 recites that "the heads of all Federal agencies shall assume responsibility for the preservation of historic properties which are owned or controlled by such agency," 16 U.S.C. § 470h-2(a)(1). Section 110 also states that properties listed on the NRHP be "managed and maintained in a way that

federal lands and in federal waters.

However, if an agency with control over federal land or water elects to adopt such substantive protections, it would be wise to give itself an escape clause similar to Washington, DC's special merit provision. It is difficult to foretell the adequacy of all areas for all types of renewable energy. For instance, suppose advancement in technology makes geothermal energy development much more feasible, or suppose a nascent technology such as tidal power becomes feasible. Rather than "rezoning" substantial tracts of federal land and water to accommodate the new technology—no small task given the public process contemplated above—the administrator of the federal land could weigh the benefits of an individual project against the benefits of continued preservation of the proposed site's historic resources.

c. *Prioritize Either Historic Preservation or Renewable Energy Development Over the Other via Legislation*

Wholly apart from more robust agency-led planning, a statutory solution could avoid future resource conflicts by exempting, or prioritizing renewable energy projects over historic resources.<sup>366</sup> As the district court noted in *Quechan Tribe I*, "Congress could determine this particular project is in the public interest and sweep aside [American Recovery and Reinvestment Act of 2009] deadlines as well as requirements under NEPA, NHPA, and [Federal Lands Policy and Management Act of 1976] to get it built. But Congress didn't do that."<sup>367</sup> In favor of renewable resources, Congress could pass legislation that preempts

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considers the preservation of history, archaeological, architectural and cultural values . . . and gives special consideration to the preservation of such values." *Id.* § 470h-2(a)(2)(B). Some historic preservation advocates have argued that NHPA's Section 110 imposes substantive requirements on federal agencies to protect historic resources on federal property. However, the courts have generally not agreed that Section 110 imposes substantive requirements on agencies. *See Wilderness Watch v. Iwamoto*, 853 F. Supp. 2d 1063, 1070–71 (W.D. Wash. 2012) ("Section 110(a) cannot be read to create new substantive preservationist obligations separate and apart from the overwhelmingly procedural thrust of the NHPA as described by every court that has considered the Act.") (citations omitted).

<sup>366</sup> *See Baker, supra* note 28, at 7 (discussing California's decision to elevate solar energy development over competing land use interests).

<sup>367</sup> *Quechan Tribe of the Fort Yuma Indian Reservation v. U.S. Dep't of the Interior*, 755 F. Supp. 2d 1104, 1122 (S.D. Cal. 2010).

NHPA for certain classes of projects, or could impose stripped down historic preservation review requirements for projects receiving certain federal assistance, meeting certain federal objectives, or occupying certain federal lands.<sup>368</sup> Alternatively, in favor of historic resources, Congress could impose more stringent, substantive historic preservation requirements for projects on federal lands or in federal waters. However, such an outcome seems unlikely given the political climate in Congress as of this writing.<sup>369</sup>

### CONCLUSION

Historic preservation laws protect historic structures, landscapes, districts, and landmarks and influence the development of the built environment at scales both great and small.<sup>370</sup> However, historic preservation is just one of many forces shaping the built environment. Preservation often competes with other influences, including demand for new and greater amounts of housing and commercial space, investment in real estate for pecuniary gain, the exploitation of natural resources, and the development of new infrastructure, among many others. Each of these influences has laudable objectives as well as occasional adverse effects on preservation, and conflicts inevitably arise over which factor or factors should most influence the use and form of

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<sup>368</sup> For instance, Connecticut has passed a law stating that “No application for a certificate of appropriateness for an exterior architectural feature, such as a solar energy system, designed for the utilization of renewable resources shall be denied unless the commission finds that the feature cannot be installed without substantially impairing the historic character and appearance of the district.” CONN. GEN. STAT. § 7-147f (2013).

<sup>369</sup> See Giddings, *supra* note 301, at 85 (citations omitted). For instance, in 2011 California Senator Dianne Feinstein introduced legislation to designate new Mojave Desert National Monuments (which would be off-limits to solar energy development) and to direct BLM to open up other lands for renewable energy development. See California Desert Protection Act of 2011, S. 138, 112th Cong. § 1307 (2011). The bill did not pass out of committee.

<sup>370</sup> Historic preservation laws have become increasingly important since American communities have begun to recognize the cultural and economic value of historic resources. See David B. Fein, *Historic District: Preserving City Neighborhoods for the Privileged*, 60 N.Y.U. L. REV. 64, 64 (1985). See generally DONOVAN D. RYPKEMA, *THE ECONOMICS OF HISTORIC PRESERVATION: A COMMUNITY LEADER’S GUIDE* (2005) (discussing the economic development benefits of historic preservation); Kent A. Robertson, *Downtown Redevelopment Strategies in the United States: An End-of-the-Century Assessment*, 61 J. AM. PLAN. ASS’N. 429, 432 (1995) (identifying historic preservation as an important aspect of the economic revitalization of traditional downtown areas).

urban areas, rural communities, and pristine landscapes. This Article aims to contribute to the recent discussion regarding conflicts between renewable energy and other environmental and social concerns.<sup>371</sup>

The development of utility-scale renewable energy resources will continue to impose adverse effects on historic resources, despite the recommended policy amendments identified above. Some competing land uses and land use interests are simply incompatible. Nevertheless, historic preservation review makes imperfect utility-scale energy projects better by imposing procedural requirements such as information gathering and consultation.

Utility-scale renewable energy development is still in its infancy in the United States, and demand for increased transmission capacity is almost certain to continue to grow. Learning from the challenges and missteps of early projects will result in better results for later projects.

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<sup>371</sup> See, e.g., Alexander, *supra* note 79; J.B. Ruhl, *Harmonizing Commercial Wind Power and the Endangered Species Act Through Administrative Reform*, 65 VAND. L. REV. 1769 (2012); Amy J. Wildermuth, *Is Environmental Law a Barrier to Emerging Alternative Energy Sources?*, 46 IDAHO L. REV. 509 (2010).

# CLE READING MATERIALS

## Monumental Decisions: One-Way Levers Towards Preservation in the Antiquities Act and Outer Continental Shelf Lands Act

FOR

2:40 p.m. – 4:00 p.m.

**EMERGING ISSUES IN NATURAL RESOURCES POLICY**

- **Nada Culver**, Senior Counsel and Director, The Wilderness Society's BLM Action Center
- **David J. Hayes**, Executive Director, State Energy and Environmental Impact Center at NYU Law; former Deputy Secretary of the Interior
- **Brenda Mallory**, Executive Director and Senior Counsel, Conservation Litigation Project; former General Counsel for the White House Council on Environmental Quality
- Moderator: **Jayni Hein**, Policy Director, Institute for Policy Integrity

**PLEASE RETURN TO REGISTRATION TABLE**

# MONUMENTAL DECISIONS: ONE-WAY LEVERS TOWARDS PRESERVATION IN THE ANTIQUITIES ACT AND OUTER CONTINENTAL SHELF LANDS ACT

BY  
JAYNI FOLEY HEIN\*

*This Article seeks to answer a key question: Do the congressionally delegated powers of the President of the United States to withdraw offshore areas from mineral leasing and to designate national monuments imply that a president has the power to rescind or diminish such designations made by prior presidents? It answers in the negative, consistent with the enduring national narrative that public lands should be regulated according to principles of democratic decision making, especially where important public trust interests are at stake. The powers conferred to the President in the Antiquities Act of 1906 and section 12(a) of the Outer Continental Shelf Lands Act (OCSLA) operate in one direction only: towards preservation. Presidents do not have the authority to rescind or diminish national monument designations or to restore permanently withdrawn areas to offshore leasing. Congress retains this authority through its plenary power over public lands set forth in the Property Clause of the U.S. Constitution.*

*This Article fills a gap in the existing literature by identifying common threads running through OCSLA section 12(a), the Antiquities Act, and the common law public trust doctrine. Longstanding public trust doctrine jurisprudence reflects the principle that important public land decision making should be done by legislatures, through their deliberative and democratic process, or pursuant to explicit legislature authority. The doctrine provides important context for a history of public lands jurisprudence in which courts demand greater justification for actions diminishing public lands than for protecting those same lands. The one-way lever structure of the Antiquities Act and OCSLA section 12(a) are consistent with this historical framework,*

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\* Policy Director, Institute for Policy Integrity, New York University School of Law, and Adjunct Professor of Law, New York University School of Law. The author wishes to thank Marna McDermott, Richard Revesz, and Dan Farber for thoughtful comments, as well as Michael Gerrard and the participants of the 2017 Sabin Colloquium on Innovative Environmental Law Scholarship at Columbia Law School for feedback on an early outline of this Article. John Muller provided exceptional research assistance. This article is for William, a great explorer.

*empowering the President to take unencumbered action to protect natural resources, but leaving the more “monumental” question of whether to remove such public land protections up to Congress, alone.*

*Furthermore, this Article argues that the public trust doctrine should serve as a background principle or canon of interpretation for public land statutes. Where, as here, a statute is silent as to whether the President can diminish public land protections, courts should presume that Congress retained such power exclusively for itself.*

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## I. INTRODUCTION

The Antiquities Act of 1906<sup>1</sup> is one of the most important conservation tools available to Presidents of the United States. Frequently invoked to preserve cultural, historical, scientifically valuable, and scenic areas on federal lands, sixteen presidents have designated 157 national monuments

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<sup>1</sup> Pub. L. No. 59-209, 34 Stat. 225 (codified as amended at 54 U.S.C. §§ 320301–320303 (Supp. II 2015)).

under Antiquities Act authority, totaling more than 800 million acres.<sup>2</sup> While President Bill Clinton was known for his prodigious use of Antiquities Act authority, President Barack Obama surpassed Clinton and well-known conservationist President Theodore Roosevelt by protecting more than 550 million acres of federal lands and waters pursuant to Antiquities Act authority.<sup>3</sup> President Obama also availed himself of a less-utilized federal statutory provision, section 12(a) of the Outer Continental Shelf Lands Act<sup>4</sup> (OCSLA), to withdraw several large areas of the Outer Continental Shelf from future mineral leasing, indefinitely.<sup>5</sup>

While President Obama's preservation agenda was largely applauded by environmentalists, it was criticized by some opponents as a "federal land grab."<sup>6</sup> Framing these actions as a "federal land grab" misstates the issue, as the land in question was owned by the federal government when it was designated as a national monument or withdrawn from mineral leasing.<sup>7</sup> From a law and policy perspective, the more interesting and pressing questions concern not the ownership of the land but the permissible bounds of executive power over this federal land. The durability of presidential preservation decisions—specifically, actions withdrawing offshore areas from future mineral leasing and designating certain federal lands as national monuments—has received limited attention in the courts and in academic literature, until now. President Obama's multiple, large-scale designations, which in some cases attracted robust state and local opposition,<sup>8</sup> and President Trump's unprecedented actions purporting to undo these designations, has drawn increased attention to this executive authority.

On April 26, 2017, President Trump signed an executive order directing the Secretary of the Department of the Interior, Ryan Zinke, to review

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<sup>2</sup> See Ani Kame'enui, *Monuments Protected Under the Antiquities Act*, NAT'L PARKS CONSERVATION ASS'N (Jan. 13, 2017), <https://perma.cc/9VC4-8LSQ>; *Archaeology Program*, NAT'L PARK SERV., <https://perma.cc/37UU-VQEE> (last updated May 8, 2017).

<sup>3</sup> See Juliet Eilperin & Brady Dennis, *With New Monuments in Nevada, Utah, Obama Adds to His Environmental Legacy*, WASH. POST (Dec. 28, 2016), <https://perma.cc/8FV2-KBRU>; Dana Varinsky, *Here's Every Piece of Land Obama Has Put Under Protection During His Presidency*, BUS. INSIDER (Jan. 16, 2017), <https://perma.cc/83SR-CVUW>.

<sup>4</sup> 43 U.S.C. §§ 1331–1356a (2012).

<sup>5</sup> Memorandum on Withdrawal of Certain Portions of the United States Arctic Outer Continental Shelf from Mineral Leasing, 2016 DAILY COMP. PRES. DOC. 1 (Dec. 20, 2016) [hereinafter Arctic Offshore Drilling Rule]; Memorandum on Withdrawal of Certain Areas of the United States Outer Continental Shelf Offshore Alaska from Leasing Disposition, 2015 DAILY COMP. PRES. DOC. 1 (Jan. 27, 2015) [hereinafter Arctic Withdrawal Rule].

<sup>6</sup> Alessandra Potenza, *Trump Signs Executive Order That Threatens National Monuments*, VERGE (Apr. 26, 2017), <https://perma.cc/TZC2-B5GY> ("Trump said the executive order would end an abuse of power that's resulted in a 'massive federal land grab.'").

<sup>7</sup> National monuments may be reserved only upon the lands "owned or controlled by the Federal Government." Antiquities Act of 1906, 54 U.S.C. § 320301(a) (Supp. II 2015). And, the OCSLA applies to offshore lands and waters under federal jurisdiction, only. 43 U.S.C. §§ 1331, 1333(a) (2012).

<sup>8</sup> For instance, the Bears Ears National Monument designation was opposed by State of Utah elected officials and the congressional delegation. Coral Davenport, *Obama Designates Two New National Monuments, Protecting 1.65 Million Acres*, N.Y. TIMES (Dec. 28, 2016), <https://perma.cc/SSE6-XP3Y>.

national monuments designated by previous presidents under the Antiquities Act, and assess whether to rescind or reduce the boundaries of some of these national monuments.<sup>9</sup> In December 2017, President Trump issued two proclamations, downsizing Bears Ears National Monument by 85% and Grand Staircase-Escalante National Monument by nearly 50%.<sup>10</sup> Native American tribes and conservation groups sued, challenging these actions under the Antiquities Act, the U.S. Constitution, and the Administrative Procedure Act<sup>11</sup> (APA).<sup>12</sup> On April 28, 2017, President Trump issued a separate executive order, rescinding President Obama's offshore leasing withdrawals made pursuant to OCSLA section 12(a).<sup>13</sup> Environmental groups sued, challenging the legality of the offshore leasing executive order.<sup>14</sup>

The key question presented by both the OCSLA and Antiquities Act controversies is not whether these federal lands can ever be converted to other uses; but whether it would take an act of Congress to rescind or diminish these protective designations, as opposed to a mere flick of the President's pen. This question, with respect to both statutes, is a matter of first impression. No court has ever decided whether a president can rescind or diminish an existing national monument designation or reverse an offshore leasing withdrawal that was established "for a time period without specific expiration."<sup>15</sup>

This Article argues that both OCSLA section 12(a) and the Antiquities Act are structured such that protected offshore areas and national monuments endure across presidential administrations, and that Congress, alone, has the power to rescind or modify these designations. Existing scholarship cogently makes the case that based on its plain language and legislative history, the Antiquities Act grants a one-direction power to the President to designate national monuments, but not to rescind or diminish existing monuments.<sup>16</sup> This Article does not repeat the detailed and

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<sup>9</sup> Exec. Order No. 13,792, 82 Fed. Reg. 20,429, 20,429 (May 1, 2017) (signed April 26, 2017).

<sup>10</sup> See Proclamation No. 9681, 82 Fed. Reg. 58,081, 58,087 (Dec. 8, 2017) (signed December 4, 2017); Proclamation No. 9682, 82 Fed. Reg. 58,089, 58,096 (Dec. 8, 2017) (signed December 4, 2017); see also Nicholas Bryner et al., *President Trump's National Monument Rollback Is Illegal and Likely To Be Reversed in Court*, CONVERSATION (Dec. 4, 2017), <https://perma.cc/T73Q-SLKT>.

<sup>11</sup> 5 U.S.C. §§ 551–559, 701–706, 1305, 3105, 3344, 4301, 5335, 5372, 7521 (2012).

<sup>12</sup> Complaint for Declaratory & Injunctive Relief, Nat. Res. Def. Council v. Trump, No. 1:17-cv-02606 (D.D.C. filed Dec. 7, 2017); Complaint for Injunctive & Declaratory Relief, Hopi Tribe v. Trump, No. 1:17-cv-02590 (D.D.C. filed Dec. 4, 2017).

<sup>13</sup> Exec. Order No. 13,795, 82 Fed. Reg. 20,815, 20,815–16 (May 3, 2017) (signed April 28, 2017).

<sup>14</sup> Complaint for Declaratory & Injunctive Relief at 2, League of Conservation Voters v. Trump, No. 3:17-cv-00101-SLG (D. Alaska filed May 3, 2017) (alleging that President Trump's executive order violates the Constitution and is unlawful because the OCSLA provides presidents with the power to protect territory, only, and not to overturn those protections and increase development).

<sup>15</sup> Arctic Offshore Drilling Rule, *supra* note 5; see ALEXANDRA M. WYATT, CONG. RESEARCH SERV., R44687, ANTIQUITIES ACT: SCOPE OF AUTHORITY FOR MODIFICATION OF NATIONAL MONUMENTS 3 (2016), <https://perma.cc/6YKX-EGWC>.

<sup>16</sup> WYATT, *supra* note 15, at 4; see, e.g., Mark Squillace et al., *Presidents Lack the Authority to Abolish or Diminish National Monuments*, 103 VA. L. REV. ONLINE 55, 70–71 (2017) [hereinafter Squillace et al., *Presidents Lack Authority*]; see also ROBERT ROSENBAUM ET AL.,

persuasive analysis contained in other articles, but it builds upon this scholarship and examines the plain text and legislative history of a similar provision, OCSLA section 12(a). Furthermore, this Article illuminates how the restraints imposed on the executive branch by both OCSLA and the Antiquities Act—in the form of one-way levers to protect special places, but not to rescind those protections—are not novel. Rather, common law public trust doctrine jurisprudence developed with a distinction between the role of legislatures and non-legislative actors with respect to public land protections. As such, the longstanding public trust doctrine should serve as a background principle to frame the interpretation and understanding of OCSLA section 12(a) and the Antiquities Act.

First, the constitutional and statutory framework for OCSLA section 12(a) and the Antiquities Act strongly support the interpretation that Congress granted the President a one-way power to preserve public lands, but not to remove those protections. A limited role for the executive branch in public lands decision making is embedded in the Property Clause of the U.S. Constitution, which vests Congress with plenary authority over public lands.<sup>17</sup> While Congress explicitly delegated to the President the power to designate national monuments and to withdraw areas from offshore leasing in these two statutes, it did not explicitly delegate the power to lift these protections once in place, instead reserving the authority to undo such protections for itself. The plain text and legislative history of the Antiquities Act, as well as attorney general opinions interpreting the provision, support the interpretation that it confers a one-way power to the President.<sup>18</sup> This structure maintains the traditional separation of powers between Congress and the President with respect to public lands, vesting Congress, the most democratic of the three branches, with decision-making power over our widely shared public lands.

Second, interpreting OCSLA section 12(a) and the Antiquities Act to confer a one-direction power to the President is consistent with the enduring national narrative that public lands should be managed and regulated according to principles of democratic decision making, especially where important public trust interests are at stake. In several U.S. states, a long line of common law public trust jurisprudence elucidates the principle that government actions diminishing, impairing, or alienating public trust lands, such as the seabed, tidelands, and public parks,<sup>19</sup> should be made through a democratic, deliberative process, such as legislative action, or at least through explicitly delegated authority.<sup>20</sup> This is especially so when an

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ARNOLD & PORTER KAYE SCHOLER, THE PRESIDENT HAS NO POWER UNILATERALLY TO ABOLISH OR MATERIALLY CHANGE A NATIONAL MONUMENT DESIGNATION UNDER THE ANTIQUITIES ACT OF 1906, at 9 (2017), <https://perma.cc/662C-TXF7>.

<sup>17</sup> See U.S. CONST. art. IV § 3, cl. 2.

<sup>18</sup> See, e.g., Squillace et al., *Presidents Lack Authority*, *supra* note 16, at 56–59.

<sup>19</sup> Certain states, like New York, extend the public trust doctrine to public parks. See discussion *infra* Part IV.C.

<sup>20</sup> See Joseph L. Sax, *The Public Trust Doctrine in Natural Resource Law: Effective Judicial Intervention*, 68 MICH. L. REV. 471, 485–91 (1970) [hereinafter Sax, *The Public Trust Doctrine*].

action would open public trust lands to exploitation or development by private parties. The theory underlying this principle is that legislatures answer to a broader constituency than municipal actors and undertake a more deliberative, open process that guards against rash, ill-informed, or corrupt decisions with respect to public lands and resources.<sup>21</sup> OCSLA section 12(a) and the Antiquities Act, in effect, place an analogous procedural restraint on the President by reserving to Congress the authority to undo protected land status.

Beyond providing an illuminating analogy, the public trust doctrine should serve as a background principle or canon of statutory construction for public land statutes. As a canon of statutory interpretation, the public trust doctrine would function as a “clear statement” rule, requiring Congress to be explicit when granting a power to act contrary to public trust principles. Thus, in the absence of a “clear statement” by Congress providing a multi-directional power to the President to both designate and remove public land protections, courts should presume that Congress retained this power for itself.

This Article also serves, in part, to refute the arguments made by John Yoo and Todd Gaziano that the conventional relationship between the executive branch and Congress supports the argument that President Trump “has the right to reverse national monuments created by previous presidents without an act of Congress.”<sup>22</sup> In their view, presidents are free to volley national monument status back and forth, according to their opinion as to what qualifies as an object of “historic or scientific interest.”<sup>23</sup> But this argument overstates the amount of power delegated to the President in the Antiquities Act. Further, their arguments ignore relevant legislative history and the overarching purpose behind these two statutory provisions: to protect certain lands and resources for the benefit of current and future generations.

The structures of the Antiquities Act and OCSLA section 12(a) impose restraints upon the executive branch in accordance with the constitutional separation of powers and a long line of laws and judicial decisions recognizing a system of checks and balances for public land decision making.<sup>24</sup> These statutes reflect the wisdom of their drafters in delegating a one-way executive power to preserve public lands, leaving the more

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<sup>21</sup> See *id.* at 490–92; see also Carol M. Rose, *Joseph Sax and the Idea of the Public Trust*, 25 *ECOLGY L.Q.* 351, 355 (1998) [hereinafter Rose, *Joseph Sax*].

<sup>22</sup> Todd Gaziano & John Yoo, Opinion, *It's Magical Legal Thinking To Say Trump Can't Reverse Obama's National Monuments*, L.A. TIMES (July 6, 2017), <https://perma.cc/KS9T-GKGA> [hereinafter Gaziano & Yoo, *Magical Legal Thinking*]; see also JOHN YOO & TODD GAZIANO, AM. ENTER. INST., PRESIDENTIAL AUTHORITY TO REVOKE OR REDUCE NATIONAL MONUMENT DESIGNATIONS (2017), <https://perma.cc/NG4K-DK9Z> [hereinafter YOO & GAZIANO, PRESIDENTIAL AUTHORITY].

<sup>23</sup> YOO & GAZIANO, PRESIDENTIAL AUTHORITY, *supra* note 22, at 13–14; see Antiquities Act of 1906, 54 U.S.C. § 320301 (Supp. II 2015) (“The President may . . . declare by public proclamation historic landmarks, historic and prehistoric structures, and other objects of historic or scientific interest . . . to be national monuments.”).

<sup>24</sup> See discussion *infra* Part III.

consequential decision of whether to lift such protections up to Congress, alone.

This Article proceeds as follows. Part II sets the stage by highlighting the national monument and OCSLA section 12(a) designations made by President Obama and some of his predecessors, and the more recent actions by the Trump Administration purporting to undo them. It shines a light on what is at stake both on the ground, in terms of protected lands, and from a legal perspective, in defining the bounds of delegated executive power over public lands.

Part III describes the constitutional and statutory framework for OCSLA section 12(a) and the Antiquities Act. In both provisions, Congress delegated specific powers to the executive branch. A careful reading of these statutory provisions reveals that Congress granted to the President a one-way power to preserve federal lands in both provisions, and reserved for itself the authority to rescind or modify these reservations once in place, pursuant to its plenary authority over public lands set forth in the Property Clause of the U.S. Constitution.

Part IV introduces the public trust doctrine, including its Roman and English common law origins. Common resources like the sea, tidelands, and submerged lands beneath navigable waters have been recognized as public trust resources for centuries.<sup>25</sup> The public trust doctrine also has a procedural component. In the United States, the doctrine has long been interpreted by several states to limit actions by non-legislative actors that threaten to diminish public trust resources, such as allowing non-public trust uses within public trust lands, or transferring public trust resources to private parties.<sup>26</sup> The public trust doctrine supports the interpretation of OCSLA section 12(a) and the Antiquities Act as conferring a one-way power to the President, consistent with the long-standing precept that public lands should be protected and managed according to principles of democratic decision making.

Part V argues that the public trust doctrine should serve as a canon of statutory interpretation to aid the interpretation of public land statutes, including the Antiquities Act and OCSLA section 12(a).<sup>27</sup> The doctrine can serve as an effective canon of statutory interpretation for public land statutes, particularly as a “clear statement” canon requiring Congress to be explicit if it intends to delegate authority to remove public land protections.<sup>28</sup> The doctrine would thus frame the inquiry with a presumption of conservation in the public interest. So applied, the canon would confirm that these two statutes confer a one-direction power to the President, consistent with their plain text, legislative history, and relevant Attorney General opinions.

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<sup>25</sup> Sax, *The Public Trust Doctrine*, *supra* note 20, at 524 n.158.

<sup>26</sup> *See id.* at 491–92, 494.

<sup>27</sup> *See* Charles F. Wilkinson, *The Public Trust Doctrine in Public Land Law*, 14 U.C. DAVIS L. REV. 269, 311–13 (1980) [hereinafter Wilkinson, *The Public Trust*]; *see also* William D. Araiza, *The Public Trust Doctrine as an Interpretive Canon*, 45 U.C. DAVIS L. REV. 693, 721–23 (2012).

<sup>28</sup> Araiza, *supra* note 27, at 721.

Part VI analyzes the common threads connecting the Antiquities Act, OCSLA, and the public trust doctrine. It concludes that the Antiquities Act and OCSLA section 12(a) reflect the wisdom of their drafters in conferring a one-way presidential power to preserve federal lands. While allowing unencumbered presidential actions to protect special places and natural resources, they reserve to Congress the more “monumental” power to modify or abolish national monuments and to return withdrawn lands to disposition by leasing.

## II. OF MONUMENTS AND MEN: PAST DESIGNATIONS AND PRESENT CONTROVERSY

President Obama and many of his predecessors invoked the Antiquities Act and OCSLA section 12(a) to designate national monuments and offshore protected areas, respectively, for environmental, historical, and cultural reasons.<sup>29</sup> The vast majority of these designations were intended to endure across presidential administrations, with the exception of certain time-limited offshore leasing moratoria areas, as evidenced in the proclamations announcing their creation.<sup>30</sup> No president has ever reversed a withdrawal of Outer Continental Shelf areas from oil and gas leasing, other than one with an express end date, prior to the Trump Administration. And no president has ever rescinded or reduced the boundaries of an existing national monument designated by a prior president subsequent to the passage of the Federal Land Policy and Management Act,<sup>31</sup> which made clear that such actions are reserved to Congress, alone.<sup>32</sup> In both respects, the Trump Administration’s actions removing protected public land status waded into legally untested waters.

### *A. The Outer Continental Shelf and OCSLA Section 12(a) Withdrawals*

The Outer Continental Shelf Lands Act (OCSLA) governs all activities on the Outer Continental Shelf, including mineral leasing. Section 12(a) of OCSLA has been used by six presidents spanning sixty-seven years, including to withdraw as much as several hundred million acres at a time.<sup>33</sup> Section 12(a) withdrawals can be time-limited, or, as President Obama and other presidents have used the provision, “for a time period without specific expiration.”<sup>34</sup> President Trump’s 2017 executive order rescinding President

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<sup>29</sup> See John Freemuth & Mackenzie Case, *What History Tells Us About Obama’s Antiquities Act Legacy*, LAW360 (Nov. 22, 2016), <https://perma.cc/KY8T-FT8N>.

<sup>30</sup> See, e.g., Proclamation No. 9558, 3 C.F.R. § 402 (2017); Proclamation No. 9234, 3 C.F.R. § 21 (2016) (“The management plan shall ensure that the monument fulfills the following purposes for the benefit of present and future generations . . .”).

<sup>31</sup> Federal Land Policy and Management Act of 1976, 43 U.S.C. §§ 1701–1787 (2012).

<sup>32</sup> See discussion *infra* Parts II.B and III.C.

<sup>33</sup> NAT. RES. DEF. COUNCIL & EARTHJUSTICE, BRIEFER ON PRESIDENTIAL WITHDRAWAL UNDER OCSLA SEC. 12(A), at i (2016), <https://perma.cc/2Z3X-F2H9>.

<sup>34</sup> E.g., Arctic Offshore Drilling Rule, *supra* note 5; Arctic Withdrawal Rule, *supra* note 5.

Obama's offshore reservations is an unprecedented action with the intended effect of opening these areas to oil and natural gas development.<sup>35</sup>

The Outer Continental Shelf of the United States is the submerged land, subsoil, and seabed lying within exclusive federal jurisdiction.<sup>36</sup> The United States asserts sovereignty over the Outer Continental Shelf within its 200-mile "exclusive economic zone."<sup>37</sup> Governance of offshore minerals and activities is split between states and the federal government. Generally, states have primary authority in the three-nautical-mile area extending from their coasts.<sup>38</sup> The federal government has exclusive jurisdiction over the remaining 197 nautical miles of the Outer Continental Shelf within its exclusive economic zone, an area almost one-tenth that of the continental United States.<sup>39</sup>

The Outer Continental Shelf contains abundant oil, natural gas, and other mineral resources. Federal offshore oil reserves represent about 11% of all oil reserves in the United States.<sup>40</sup> Developing and managing these fossil fuel reserves was a primary motivation behind the passage of OCSLA in 1953.<sup>41</sup>

In addition to providing valuable energy resources, oil and gas activities conducted on the Outer Continental Shelf have the potential to affect the sea floor, water, and coastal areas. One of the greatest risks of offshore oil and gas development is the risk of an oil spill, with its attendant effects on wildlife, fishing stocks, water quality, and coastal economies.<sup>42</sup> Aside from

<sup>35</sup> See generally Exec. Order No. 13,792, 82 Fed. Reg. 20,429 (May 1, 2017).

<sup>36</sup> *Outer Continental Shelf*, BUREAU OCEAN ENERGY MGMT., <https://perma.cc/8NXR-DTND> (last visited Jan. 27, 2018); see also OCSLA, 43 U.S.C. §§ 1331(a), 1333(a)(3) (2012).

<sup>37</sup> Proclamation No. 5030, 3 C.F.R. § 22 (1984), *reprinted as amended in* 16 U.S.C. § 1453 (2012).

<sup>38</sup> Three nautical miles is equivalent to 3.452 miles or 5.556 kilometers. Texas and the Gulf Coast of Florida have jurisdiction extending approximately nine nautical miles seaward from their coastlines. See *Outer Continental Shelf*, *supra* note 36.

<sup>39</sup> See Warren M. Christopher, *The Outer Continental Shelf Lands Act: Key to A New Frontier*, 6 STAN. L. REV. 23, 23 (1953); *Outer Continental Shelf*, *supra* note 36.

<sup>40</sup> MARC HUMPHRIES, CONG. RESEARCH SERV., R42432, U.S. CRUDE OIL AND NATURAL GAS PRODUCTION IN FEDERAL AND NONFEDERAL AREAS 2 (2016). "Taken together, U.S. federal oil reserves equal about 24% of all U.S. crude oil (and condensate) reserves, which are estimated at 39.9 billion barrels, according to the [United States Energy Information Administration]." *Id.*

[T]here are an estimated 5.3 billion barrels of proved oil reserves located on federal acreage onshore and . . . 4.3 billion barrels of proved reserves offshore.

....

U.S. dry gas proved reserves are estimated at about 388.8 trillion cubic feet (tcf) . . . , of which the federal share is about 22% (69 tcf onshore, 16 tcf offshore).

*Id.* at 2, 4.

<sup>41</sup> See Robin Kundis Craig, *Treating Offshore Submerged Lands as Public Lands: A Historical Perspective*, 34 PUB. LAND & RESOURCES L. REV. 51, 53 (2013).

<sup>42</sup> BUREAU OF OCEAN ENERGY MGMT., 2017–2022 OUTER CONTINENTAL SHELF OIL AND GAS LEASING PROPOSED FINAL PROGRAM 2-2 (2016), <https://perma.cc/RW8W-N5BT>; see also Arctic Offshore Drilling Rule, *supra* note 5 (citing as justification for the withdrawal "the unique logistical, operational, safety, and scientific challenges and risks of oil extraction and spill response in these Arctic waters").

the catastrophic risk of an oil spill, more common effects include discharge of oil, wastewater, and debris; air pollution, including greenhouse gas emissions; infrastructure impacts such as pipeline trenching on the seafloor; and increased vessel traffic to and from production and exploration sites—all of which can negatively affect aquatic wildlife and ecosystems.<sup>43</sup>

Congress was mindful of protecting the environmental resources of the Outer Continental Shelf when it passed OCSLA in 1953. OCSLA provides that the Secretary of the Interior can “at any time prescribe and amend such rules and regulations as he determines to be necessary and proper in order to provide for the prevention of waste and conservation of the natural resources of the Outer Continental Shelf, and the protection of correlative rights therein.”<sup>44</sup> In addition, Congress delegated separate authority to the President in OCSLA section 12(a), allowing him or her to “withdraw from disposition any of the unleased lands of the outer Continental Shelf.”<sup>45</sup>

From the beginning, presidents invoked section 12(a) in the name of environmental protection and conservation, and signaled that certain withdrawals were intended to be permanent. In 1960, President Eisenhower first used OCSLA section 12(a) to withdraw offshore areas to create the Key Largo Coral Reef Preserve, “for the purpose of preserving the scenic and scientific values of this area unimpaired for the benefit of future generations.”<sup>46</sup> In 1969, the Secretary of the Interior, presumably acting pursuant to authority delegated by the President, invoked OCSLA section 12(a) following the Santa Barbara oil spill to withdraw 21,000 acres of unleased offshore lands and designate them as an “Ecological Preserve.”<sup>47</sup>

Other presidents have withdrawn offshore areas from oil and gas leasing pursuant to OCSLA section 12(a), many of which covered large areas. In 1990, President George H.W. Bush removed a number of areas from potential leasing for a set time period,<sup>48</sup> and in 1998, President Clinton extended this order through 2012.<sup>49</sup> In addition, President Clinton withdrew all of the areas of the Outer Continental Shelf designated as marine sanctuaries under the Marine Protection, Research, and Sanctuaries Act of 1972<sup>50</sup> from disposition by leasing for a time period without specific

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<sup>43</sup> See BUREAU OF OCEAN ENERGY MGMT., *supra* note 42, at S-9.

<sup>44</sup> OCSLA, 43 U.S.C. § 1334(a) (2012).

<sup>45</sup> *Id.* § 1341(a).

<sup>46</sup> Proclamation No. 3339, 3 C.F.R. § 20 (Supp. 1960) (signed March 19, 1960), *reprinted in* 54 U.S.C. § 320101 (Supp. II 2015).

<sup>47</sup> Establishment of Santa Barbara Channel Ecological Preserve, 34 Fed. Reg. 5655, 5655 (Mar. 26, 1969).

<sup>48</sup> Statement on Outer Continental Shelf Oil and Gas Development, 26 WEEKLY COMP. PRES. DOC. 1006 (June 26, 1990).

<sup>49</sup> Memorandum on Withdrawal of Certain Areas of the United States Outer Continental Shelf from Leasing Disposition, 34 WEEKLY COMP. PRES. DOC. 1111 (June 12, 1998) [hereinafter Clinton’s Withdrawal].

<sup>50</sup> Pub. L. No. 92-532, 86 Stat. 1052 (codified as amended in scattered sections of 16 and 33 U.S.C.).

expiration.<sup>51</sup> In total, President Clinton's section 12(a) reservations covered 300 million acres.<sup>52</sup> President George W. Bush eliminated President Clinton's time-limited reservation, but left in place the designations that were not time-limited.<sup>53</sup> The legality of this action was never tested in court.

On January 27, 2015, President Obama, acting pursuant to the authority vested in him by Congress through OCSLA section 12(a), withdrew areas in the Arctic's Beaufort and Chukchi Seas from oil and gas leasing "for a time period without specific expiration."<sup>54</sup> On December 20, 2016, President Obama withdrew additional areas of the U.S. Arctic Ocean and Atlantic Ocean from future oil and gas "leasing for a time period without specific expiration."<sup>55</sup> In total, President Obama's Arctic reservations protected an additional 115 million offshore acres from oil and gas leasing.<sup>56</sup> In his proclamations announcing these actions, President Obama cited the importance of these areas to "subsistence use by Alaska Natives as well as for marine mammals, other wildlife, and wildlife habitat."<sup>57</sup> He also stated his intention "to ensure that the unique resources of these areas remain available for future generations."<sup>58</sup> In the Atlantic, President Obama withdrew thirty-one offshore canyons and canyon complexes comprising 3.8 million acres.<sup>59</sup> The President noted "the critical importance of canyons along the edge of the Atlantic continental shelf for marine mammals, deep water corals, other wildlife, and wildlife habitat," and the need "to ensure that the unique resources associated with these canyons remain available for future generations."<sup>60</sup>

While environmental preservation is not the only permissible motive for withdrawal under section 12(a), every exercise of the clause to date has been for a preservation-related purpose.<sup>61</sup> OCSLA section 12(a) prohibits oil and gas leasing in withdrawn areas. As a practical matter, withdrawing offshore areas from mineral leasing through OCSLA section 12(a) helps to protect marine wildlife and habitat, and provide long-term opportunities for

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<sup>51</sup> President Clinton's withdrawals added the language: "Each of these withdrawals is subject to revocation by the President in the interest of national security." Clinton's Withdrawal, *supra* note 49.

<sup>52</sup> NAT. RES. DEF. COUNCIL & EARTHJUSTICE, *supra* note 33, at i.

<sup>53</sup> Memorandum on Modification of the Withdrawal of Areas of the United States Outer Continental Shelf from Leasing Disposition, 44 WEEKLY COMP. PRES. DOC. 986 (July 14, 2008).

<sup>54</sup> Arctic Withdrawal Rule, *supra* note 5.

<sup>55</sup> Arctic Offshore Drilling Rule, *supra* note 5.

<sup>56</sup> Press Release, U.S. Dep't of the Interior, Secretary Jewell Applauds President's Withdrawal of Atlantic and Arctic Ocean Areas from Future Oil and Gas Leasing (Dec. 20, 2016), <https://perma.cc/QQ5B-E2VN>.

<sup>57</sup> See Arctic Offshore Drilling Rule, *supra* note 5.

<sup>58</sup> *Id.*

<sup>59</sup> U.S. DEP'T OF THE INTERIOR, FACT SHEET: UNIQUE ATLANTIC CANYONS PROTECTED FROM OIL AND GAS ACTIVITY, <https://perma.cc/6NJG-GZ3D> (last visited Jan. 27, 2018).

<sup>60</sup> Memorandum on Withdrawal of Certain Areas off the Atlantic Coast on the Outer Continental Shelf from Mineral Leasing, 2016 DAILY COMP. PRES. DOC. 1 (Dec. 20, 2016).

<sup>61</sup> See generally NAT. RES. DEF. COUNCIL & EARTHJUSTICE, *supra* note 33.

research, recreation, and exploration.<sup>62</sup> The risk of catastrophic oil spills in withdrawn areas is greatly reduced. And while the precise effects depend on the global energy market, withholding large offshore areas from fossil fuel leasing and development has the potential to reduce aggregate greenhouse gas emissions.<sup>63</sup>

On April 28, 2017, President Trump issued an executive order rescinding President Obama's withdrawals made pursuant to OCSLA section 12(a).<sup>64</sup> No president has ever rescinded a section 12(a) withdrawal made for "a time period without specific expiration." The executive order was challenged in court by environmental groups, as beyond the President's authority.<sup>65</sup> In January 2018, the Department of the Interior released a new draft program for offshore drilling on the Outer Continental Shelf, to replace the program prepared during the Obama Administration.<sup>66</sup> The Trump Administration's draft program proposes to make over 90% of federal offshore lands available for future exploration and development, and to hold the largest number of lease sales in U.S. history.<sup>67</sup> This is an enormous expansion—the current program offers roughly 6% of available offshore acreage for lease—and it contemplates leasing in areas previously withdrawn by President Obama pursuant to his section 12(a) authority.<sup>68</sup> Governors and members of Congress from several coastal states, on both sides of the aisle, have voiced their opposition to the proposal, as coastal states dependent on tourism and fishing face serious risks from offshore oil spills.<sup>69</sup>

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<sup>62</sup> BUREAU OF OCEAN ENERGY MGMT., *supra* note 42, at xi ("The greatest concern related to oil and gas development . . . is that of an accidental oil spill.").

<sup>63</sup> See, e.g., Peter Erickson, *Final Obama Administration Analysis Shows Expanding Oil Supply Increases CO<sub>2</sub>*, STOCKHOLM ENV'T INST. (Jan. 30, 2017), <https://perma.cc/A3NH-3KBN>.

<sup>64</sup> See generally Exec. Order No. 13,795, 82 Fed. Reg. 20,815 (May 3, 2017).

<sup>65</sup> See generally Complaint for Declaratory & Injunctive Relief, League of Conservation Voters v. Trump, No. 3:17-cv-00101-SLG (D. Alaska filed May 3, 2017).

<sup>66</sup> Preparation of a new five-year leasing program also requires compliance with the National Environmental Policy Act of 1969 (NEPA). 43 U.S.C. § 1344(b)(3) (2012). The existing program, prepared by the Obama Administration, does not contain any scheduled lease sales in the Atlantic and only one lease sale in a small area of the Arctic that has a history of offshore oil production. BUREAU OF OCEAN ENERGY MGMT., *supra* note 42, at S-7, 4-11 & tbl.4-3.

<sup>67</sup> Press Release, U.S. Dep't of the Interior, Secretary Zinke Announces Plan for Unleashing America's Offshore Oil and Gas Potential (Jan. 4, 2018), <https://perma.cc/JC3C-W6LV>.

<sup>68</sup> Lisa Friedman, *Trump Moves to Open Nearly All Offshore Waters to Drilling*, N.Y. TIMES (Jan. 4, 2018), <https://perma.cc/34BF-22U4> ("The Obama administration blocked drilling on about 94 percent of the outer continental shelf, the submerged offshore area between state coastal waters and the deep ocean. Mr. Zinke charged that those restrictions had cost the United States billions of dollars in lost revenue and said the new proposal would make about 90 percent of those waters available for leasing.").

<sup>69</sup> See *id.*; Michael Livermore & Jayni Hein, Opinion, *The Keys to Our Coastal Kingdom*, U.S. NEWS & WORLD REP. (Jan. 10, 2018), <https://perma.cc/2MUM-6HQH>.

*B. National Monument Designations Pursuant to the Antiquities Act*

The Antiquities Act of 1906 authorizes the President to identify “objects of historic or scientific interest” and reserve federal lands necessary to protect such objects as national monuments.<sup>70</sup> With limited exceptions, each president since the passage of the Antiquities Act has exercised his authority to designate national monuments.<sup>71</sup> The Antiquities Act offers a broader menu of protections for designated lands than OCSLA section 12(a), which is limited to prohibiting oil and gas leasing.

When presidents designate national monuments, they typically proclaim the existence of the monument and establish restrictions on activities within the monument area. Directives in national monument proclamations instruct land managing agencies (typically, the Bureau of Land Management, the National Park Service, or the Forest Service) to implement certain use restrictions and exercise their expertise to develop a management strategy for the monument.<sup>72</sup> The basic management goal for designated national monuments is protection and preservation.<sup>73</sup> Many national monument designations prohibit new coal mining, hard rock mining, and oil and natural gas production, as well as other activities like commercial fishing or the use of off-road vehicles.<sup>74</sup> As such, national monument status generally confers a broader set of public land protections than OCSLA section 12(a), which is limited to prohibiting mineral leasing.<sup>75</sup>

National monuments protect important ecological, scenic, and historical values for present and future generations. They also serve to preserve ecological areas valuable for scientific study and recreation. At the same time, many national monument designations have been controversial.<sup>76</sup> Critics of national monument designations have argued that “locking up” large areas of federal lands from development deprives nearby communities of revenue from prohibited activities like grazing, drilling, commercial

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<sup>70</sup> Antiquities Act of 1906, 54 U.S.C. § 320301(a) (Supp. II 2015).

<sup>71</sup> See Kame’enui, *supra* note 2 (listing the national monuments designated during each president’s administration).

<sup>72</sup> See *id.*

<sup>73</sup> *Id.*

<sup>74</sup> See, e.g., Proclamation No. 9558, 3 C.F.R. § 402 (2017) (prohibiting mining and mineral leasing in Bears Ears National Monument); Proclamation No. 9478, 3 C.F.R. § 231 (2017) (prohibiting commercial fishing, drilling, and mining in the Papahānaumokuākea Marine National Monument); Proclamation No. 7397, 3 C.F.R. § 22 (2002) (prohibiting mining, mineral leasing, and off-road vehicles in Sonoran Desert National Monument, while allowing some grazing to continue if BLM determines that grazing is compatible with the “paramount purpose” of protecting the monument).

<sup>75</sup> OCSLA, 43 U.S.C. § 1341(a) (2012).

<sup>76</sup> For instance, President Clinton’s 1996 designation of the Grand Staircase-Escalante National Monument, consisting of 1.7 million acres in southern Utah, prompted vocal local opposition. See, e.g., Associated Press, *Fightin’ Words: National Monuments*, NBC NEWS (Feb. 23, 2010), <https://perma.cc/M76A-5UWW> (“The last time they did that in Grand Staircase, they locked out a lot of ranchers, they locked out a whole bunch of clean coal.”).

fishing, and mining.<sup>77</sup> Supporters of monuments point to their environmental, social, and economic benefits.<sup>78</sup>

While the Antiquities Act describes “objects of historic or scientific interest,” the Act has been interpreted and applied for more than a century to allow the protection of very large areas, such as the Grand Canyon.<sup>79</sup> Courts, including the United States Supreme Court, have consistently upheld the use of the Antiquities Act to protect large landscapes under the Act.<sup>80</sup>

President Obama continued the longstanding presidential practice of designating large land areas as national monuments under the Antiquities Act. One of President Obama’s largest terrestrial monument designations was Bears Ears National Monument in southeastern Utah, encompassing approximately 1.35 million acres.<sup>81</sup> The President’s 2016 Proclamation withdrew these federal lands from all forms of sale and disposition, as well as mineral and geothermal leasing.<sup>82</sup> The Proclamation cited the area’s “cultural, prehistoric, and historic legacy,” and its “diverse array of natural and scientific resources,” such that monument status would ensure “that the prehistoric, historic, and scientific values of this area remain for the benefit of all Americans.”<sup>83</sup>

President Obama also designated new marine monuments in the Atlantic and Pacific Oceans, placing these areas off limits to commercial fishing, drilling, and mining. The Northeast Canyons and Seamounts Marine National Monument covers 4,913 square miles located 150 miles southeast of Cape Cod—an area nearly the size of the state of Connecticut—and includes three underwater canyons deeper than the Grand Canyon and four underwater mountains home to rare and endangered species.<sup>84</sup> In his Proclamation, President Obama framed the monument designation as a response to growing threats to the ocean ecosystem.<sup>85</sup> He noted that these

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<sup>77</sup> See, e.g., Todd Gaziano & John Yoo, *Trump Can Reverse Obama’s Last-Minute Land Grab*, WALL STREET J. (Dec. 30, 2016), <https://perma.cc/9HB4-MXNH>.

<sup>78</sup> See, e.g., HEADWATERS ECON., UPDATED SUMMARY: THE ECONOMIC IMPORTANCE OF NATIONAL MONUMENTS TO COMMUNITIES 1 (2017), <https://perma.cc/6YQJ-T8ZG> (“[L]ocal economies surrounding all 17 of the national monuments studied expanded following the creation of the new national monuments.”); Paul Lorah & Rob Southwick, *Environmental Protection, Population Change, and Economic Development in the Rural Western United States*, 24 POPULATION & ENV’T 255, 258–59 (2003) (“[T]he presence of natural amenities—pristine mountains, clean air, wildlife, and scenic vistas—stimulates employment, income growth and economic diversification by attracting tourists . . . .”); Ray Rasker et al., *The Effect of Protected Federal Lands on Economic Prosperity in the Non-Metropolitan West*, 43 J. REGIONAL ANALYSIS & POL’Y 110, 111 (2013).

<sup>79</sup> Mark Squillace, *The Monumental Legacy of the Antiquities Act of 1906*, 37 GA. L. REV. 473, 483, 490 (2003) [hereinafter Squillace, *The Monumental Legacy*].

<sup>80</sup> See *Cameron v. United States*, 252 U.S. 450, 455–56 (1920) (upholding the designation of the Grand Canyon as a national monument); *Tulare County v. Bush*, 306 F.3d 1138, 1140–41 (D.C. Cir. 2002) (discussing Giant Sequoia National Monument).

<sup>81</sup> See generally Proclamation No. 9558, 3 C.F.R. § 402 (2017).

<sup>82</sup> *Id.*

<sup>83</sup> *Id.*

<sup>84</sup> Michael P. Norton, *Monument Designation for Seabed off Cape Cod Under Review by Trump Administration*, MARBLEHEAD REP. (Apr. 27, 2017), <https://perma.cc/7DS7-Y8W2>.

<sup>85</sup> Proclamation No. 9496, 3 C.F.R. § 262 (2017).

“unique ecological resources” have long been the subject of scientific interest, and that “[t]hese habitats are extremely sensitive to disturbance from extractive activities.”<sup>86</sup>

President Obama also expanded the existing Papahānaumokuākea Marine National Monument in the Pacific Ocean, originally created by President George W. Bush in 2006,<sup>87</sup> to more than 582,000 square miles, making it the largest marine protected area in the world.<sup>88</sup> The expansion prohibits commercial fishing and mineral extraction within the monument.<sup>89</sup> The Proclamation did not modify the existing marine monument designated by President George W. Bush, but designated additional, adjacent areas which “contain[] objects of historic and scientific interest” to be part of the Papahānaumokuākea Marine National Monument Expansion.<sup>90</sup>

Until now, no president has attempted to rescind a monument designation made by his predecessor. Executive Order 13792 directed the Secretary of the Interior to review all national monuments designated or expanded after January 1, 1996, that either include more than 100,000 acres of public lands or for which the Secretary determines inadequate “public outreach and coordination with relevant stakeholders” occurred.<sup>91</sup> Following this Executive Order, on May 11, 2017, the Department of the Interior announced that it was accepting public comments on twenty-seven monuments that it intended to review, including the Grand Staircase-Escalante National Monument and Bears Ears National Monument.<sup>92</sup> The public comment period was open for just sixty days, yet the Interior Department received nearly 3 million comments which were “overwhelmingly in favor of maintaining existing monuments.”<sup>93</sup> Secretary of

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<sup>86</sup> *Id.*

<sup>87</sup> See Proclamation No. 8031, 3 C.F.R. § 67 (2007).

<sup>88</sup> Frances Kai-Hwa Wang, *Obama To Expand Papahānaumokuākea Marine National Monument in Hawaii*, NBC NEWS (Aug. 26, 2016), <https://perma.cc/4PQR-A7BP>.

<sup>89</sup> See Proclamation No. 9478, 3 C.F.R. § 231 (2017).

<sup>90</sup> *Id.* The President also stated that:

the Secretary of Commerce should consider initiating the process under the National Marine Sanctuaries Act to designate the Monument Expansion area and the Monument seaward of the Hawaiian Islands National Wildlife Refuge and Midway Atoll National Wildlife Refuge and Battle of Midway National Memorial as a National Marine Sanctuary to supplement and complement existing authorities.

*Id.* (citation omitted).

<sup>91</sup> Exec. Order No. 13,792, 82 Fed. Reg. 20,429, 20,429 (May 1, 2017).

<sup>92</sup> See *generally* Review of Certain National Monuments Established Since 1996; Notice of Opportunity for Public Comment, 82 Fed. Reg. 22,016 (May 11, 2017).

<sup>93</sup> U.S. DEP’T OF THE INTERIOR, REPORT SUMMARY BY U.S. SECRETARY OF THE INTERIOR RYAN ZINKE (2017), <https://perma.cc/G8G6-NL28> [hereinafter ZINKE REPORT]; *Conservation Groups File Lawsuit After President Trump Illegally Axed Majestic Bears Ears National Monument*, EARTHJUSTICE (Dec. 7, 2017), <https://perma.cc/HJ38-NKAQ> (“Nearly three million Americans voiced their support for national monuments during Trump’s monument review, but he chose to ignore both the American people and the letter of the law to cater to the extractive industries who would gut our natural wonders,” said Heidi McIntosh, Managing Attorney in Earthjustice’s Rocky Mountain office.”).

the Interior Ryan Zinke released a two-page summary of his findings.<sup>94</sup> On September 17, 2017, the *Washington Post* published a leaked copy of Secretary Zinke's longer draft memorandum to President Trump, in which he recommended reducing the size of four national monuments and modifying the proclamations of several other monuments to allow a wider array of uses, including mining, hunting, commercial fishing, and grazing.<sup>95</sup>

On December 4, 2017, acting without congressional approval, President Trump issued a Proclamation reducing the size of Bears Ears National Monument in southern Utah by 85% and separating it into two units.<sup>96</sup> He also reduced the boundaries of Grand Staircase-Escalante National Monument by nearly 50%, claiming that its current boundaries were "greater than the smallest area compatible with the protection of the objects for which lands were reserved."<sup>97</sup> Conservation organizations and Native American tribes filed lawsuits challenging the legality of these actions.<sup>98</sup>

No court has ever ruled on the legality of presidential monument modifications. In the first decades of the Antiquities Act's existence, some presidents reduced the size of national monuments designated by their predecessors. Most of these actions were relatively minor, and none of these modifications were challenged in court.<sup>99</sup> Further, no president has reduced the size of a monument since President Kennedy modified the boundaries of the Bandelier National Monument in New Mexico in 1963.<sup>100</sup> All of these presidential modifications occurred before the passage of the Federal Land Policy and Management Act in 1976, which expressly reserved to Congress the power to rescind and modify national monuments created under the Antiquities Act.<sup>101</sup> In several instances, Congress has modified or abolished national monuments through legislation.<sup>102</sup>

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<sup>94</sup> ZINKE REPORT, *supra* note 93.

<sup>95</sup> See Juliet Eilperin, *Shrink at Least 4 National Monuments and Modify a Half-Dozen Others, Zinke Tells Trump*, WASH. POST (Sept. 17, 2017), <https://perma.cc/M84Q-4UPT>. See generally Memorandum from Ryan Zinke, Sec'y of the Interior, U.S. Dep't of the Interior, to President Donald J. Trump (Aug. 24, 2017), <https://perma.cc/EJ56-NRAC>.

<sup>96</sup> Proclamation No. 9681, 82 Fed. Reg. 58,081, 58,087 (Dec. 8, 2017) (signed December 4, 2017); see Lee Davidson & Thomas Burr, *Trump Greeted by Cheers and Protests as He Visits Utah, Trims 2 Million Acres from Bears Ears and Grand Staircase-Escalante National Monuments*, SALT LAKE TRIB. (Dec. 4, 2017), <https://perma.cc/BX8J-W579>.

<sup>97</sup> Proclamation No. 9682, 82 Fed. Reg. 58,089, 58,091 (Dec. 8, 2017) (signed December 4, 2017); see also Nicholas Bryner et al., *supra* note 10.

<sup>98</sup> Complaint for Declaratory & Injunctive Relief, Nat. Res. Def. Council v. Trump, No. 1:17-cv-02606 (D.D.C. filed Dec. 7, 2017); Complaint for Injunctive & Declaratory Relief, Hopi Tribe v. Trump, No. 1:17-cv-02590 (D.D.C. filed Dec. 4, 2017).

<sup>99</sup> See Squillace et al., *Presidents Lack Authority*, *supra* note 16, at 65.

<sup>100</sup> Proclamation No. 3539, 3 C.F.R. § 62 (Supp. 1963).

<sup>101</sup> Squillace et al., *Presidents Lack Authority*, *supra* note 16, at 65; see Federal Land Policy and Management Act of 1976, 43 U.S.C. § 1714(j) (Supp. II 2015) ("The Secretary shall not . . . modify or revoke any withdrawal creating national monuments under chapter 3203 of [the Antiquities Act].").

<sup>102</sup> For example, Congress abolished the Wheeler National Monument in 1950, Act of Aug. 3, 1950, ch. 534, 64 Stat. 405; the Shoshone Cavern in 1954, Act of May 17, 1954, ch. 203, 68 Stat. 98; the Papago Saguaro in 1930, Act of Apr. 7, 1930, ch. 107, 46 Stat. 142; the Old Kasaan in 1955,

The on-the-ground impacts of removing national monument status or diminishing the size of a national monument would depend upon the particular monument's characteristics and the protections that would be lost. Leasing for coal mining, oil, and natural gas production could resume if an area reverted back to its previous status under a management plan that allowed such extractive uses.<sup>103</sup> For marine monuments, commercial fishing, mining, and oil and gas leasing could resume, unless prohibited by other federal laws. This Article next turns to the Property Clause of the U.S. Constitution, which vests Congress with plenary authority over federal lands, and to the text and legislative history of the two statutory provisions at issue: OCSLA section 12(a) and the Antiquities Act.

### III. THE CONSTITUTIONAL AND STATUTORY FRAMEWORK

This Part describes the relevant constitutional and statutory framework for OCSLA section 12(a) and the Antiquities Act. The Property Clause of the U.S. Constitution provides Congress with plenary power over federal lands. In OCSLA section 12(a) and the Antiquities Act, Congress delegated specific powers to the executive branch. A careful reading of these statutory provisions, as well as relevant history leading up to and subsequent to their passage, reveals that Congress granted to the President a one-way power to preserve federal lands in both provisions. Congress reserved its authority to rescind or modify these reservations once in place.

#### *A. The Property Clause: Congress as Caretaker of Public Lands*

The U.S. Constitution establishes a property system whereby Congress has plenary authority over public lands. The Property Clause of the Constitution provides that: "The Congress shall have Power to dispose of and make all needful Rules and Regulations respecting the Territory or other Property belonging to the United States."<sup>104</sup> As the U.S. Supreme Court has articulated, "[t]he power over the public land [is] thus entrusted to Congress . . . without limitations. And it is not for the courts to say how that trust shall be administered. That is for Congress to determine."<sup>105</sup>

A limited role for the executive branch in public lands decision making is embedded in the Property Clause of the U.S. Constitution. Congress may delegate its authority to the President or components of the executive branch so long as it sets out an "intelligible principle" to guide that exercise

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Act of July 26, 1955, ch. 387, 69 Stat. 380; the Fossil Cyad in 1956, Act of Aug. 1, 1956, ch. 847, 70 Stat. 898; and the Castle Pinckney in 1956, Act of Mar. 29, 1956, ch. 104, 70 Stat. 61.

<sup>103</sup> For example, land within the Bears Ears National Monument in Utah was open to new coal mining, oil and gas production, and uranium prospecting and mining under the management plan in place prior to the designation of Bears Ears as a national monument in 2016. See BUREAU OF LAND MGMT.: MONTICELLO FIELD OFFICE, RECORD OF DECISION AND APPROVED RESOURCE MANAGEMENT PLAN 3 (2008).

<sup>104</sup> U.S. CONST. art. IV, § 3, cl. 2.

<sup>105</sup> *Alabama v. Texas*, 347 U.S. 272, 273 (1954) (internal quotations omitted).

of authority.<sup>106</sup> Requiring intelligible principles in statutory delegations ensures that “courts charged with reviewing the exercise of delegated legislative discretion will be able to test that exercise against ascertainable standards.”<sup>107</sup>

In our increasingly complex society, “Congress simply cannot do its job absent an ability to delegate power under broad general directives.”<sup>108</sup> This is true with respect to management of federal lands and waters, which comprise approximately 640 million acres of land in the United States.<sup>109</sup> Through multiple statutes, Congress has delegated powers to numerous federal agencies, as well as the President, to manage public lands.<sup>110</sup> Congress frequently delegates broad authority to federal land management agencies such as the Bureau of Land Management (BLM), the Forest Service, the Fish and Wildlife Service, and the National Park Service to set rules and regulations to guide the administration, management, and development of federal lands.<sup>111</sup>

Over its long history, Congress has “withdrawn,” or exempted, some federal public lands from statutes that allow for resource extraction and development, and “reserved” them . . . for preservation and resource conservation. Congress has also, in several instances, delegated to the executive branch the authority to set aside lands for particular types of protection.<sup>112</sup>

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<sup>106</sup> *Accord* J.W. Hampton, Jr. & Co. v. United States, 276 U.S. 394, 409 (1928) (“If Congress shall lay down by legislative act an intelligible principle to which the person or body authorized to fix such rates is directed to conform, such legislative action is not a forbidden delegation of legislative power.”).

<sup>107</sup> *Indus. Union Dep’t v. Am. Petroleum Inst.*, 448 U.S. 607, 685–86 (1980) (Rehnquist, J., concurring). Courts reviewing agency actions pursuant to delegated authority may also consider whether Congress intended to vest important economic and policy considerations with the agency, and if so, whether it made that intent clear. *See, e.g.*, *Food & Drug Admin. v. Brown & Williamson Tobacco Corp.*, 529 U.S. 120, 160 (2000) (reviewing a policy change by the Food and Drug Administration to regulate tobacco products and stating, “we are confident that Congress could not have intended to delegate a decision of such economic and political significance to an agency in so cryptic a fashion”).

<sup>108</sup> *Mistretta v. United States*, 488 U.S. 361, 372 (1989).

<sup>109</sup> CAROL HARDY VINCENT ET AL., CONG. RESEARCH SERV., R42346, FEDERAL LAND OWNERSHIP: OVERVIEW AND DATA 1 (2017) (“Four major federal land management agencies manage 610.1 million acres of this land, or about 95% of all federal land in the United States. These agencies are as follows: Bureau of Land Management (BLM), 248.3 million acres; Forest Service (FS), 192.9 million acres; Fish and Wildlife Service (FWS), 89.1 million acres; and National Park Service (NPS), 79.8 million acres. Most of these lands are in the West, including Alaska.”). BLM is also responsible for subsurface mineral resources in areas totaling 700 million acres. BUREAU OF LAND MGMT., MINING CLAIMS AND SITES ON FEDERAL LANDS, at i (2016), <https://perma.cc/CLK9-7947>. “Ownership and use of federal lands have stoked controversy[,] . . . including the extent to which the federal government should own land,” and how to balance the development and protection of natural resources on federal lands. VINCENT ET AL., *supra*, at 1.

<sup>110</sup> VINCENT ET AL., *supra* note 109, at 19.

<sup>111</sup> *Id.* at 19–20.

<sup>112</sup> Squillace et al., *Presidents Lack Authority*, *supra* note 16, at 57 (footnote omitted) (citing Wilderness Act, 16 U.S.C. § 1133(d)(3) (2012)); *see also* Wild and Scenic Rivers Act, 16 U.S.C. § 1280(b).

The Antiquities Act and OCSLA section 12(a) are two such delegations, made to the President directly.<sup>113</sup>

Both OCSLA section 12(a) and the Antiquities Act contain intelligible principles guiding the exercise of executive branch authority. However, the authority conveyed by Congress to the President in these provisions is limited. As described below, Congress delegated to the President the power to preserve public lands, but it did not delegate the power to lift such protections.<sup>114</sup> The one-way levers of the Antiquities Act and OCSLA section 12(a) allow the executive branch to protect special objects and places by effectively pressing “pause,” and reserve to Congress the ability to alter or remove these protections. This conclusion is bolstered by an examination of the plain text of the statutes, their legislative history, relevant attorney general opinions, and additional public land statutes passed before and after these Acts, which shows that Congress was clear in other laws when it sought to delegate “multidirectional” powers to the executive branch.

*B. OCSLA Section 12(a): Plain Text, Legislative History, and  
Contemporaneous Statutes*

Congress enacted OCSLA in 1953 in order to establish an orderly framework for governing the exploration and development of fossil fuels on the Outer Continental Shelf.<sup>115</sup> In addition to promoting oil and gas development, Congress was mindful of protecting other values on the Outer Continental Shelf, including conservation. OCSLA provides that the Secretary of the Interior can “at any time prescribe and amend such rules and regulations as he determines to be necessary and proper in order to provide for the prevention of waste and conservation of natural resources of the Outer Continental Shelf, and the protection of correlative rights therein.”<sup>116</sup>

In addition, Congress delegated separate authority to the President in OCSLA section 12(a). The plain language of OCSLA section 12(a) should be the starting point for analyzing its meaning, as in any exercise of statutory interpretation.<sup>117</sup> As the Supreme Court has stated, “There is . . . no more persuasive evidence of the purpose of a statute than the words by which the legislature undertook to give expression to its wishes.”<sup>118</sup>

OCSLA section 12(a) is titled “Reservations,” and states, in full: “The President of the United States may, from time to time, withdraw from disposition any of the unleased lands of the outer Continental Shelf.”<sup>119</sup> A

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<sup>113</sup> See *id.* at 56–57; see also discussion *infra* Part III.B.

<sup>114</sup> See discussion *infra* Part III.B.

<sup>115</sup> See OCSLA, 43 U.S.C. § 1332 (2012). See *infra* Part IV for more information on the history of OCSLA and the public trust doctrine.

<sup>116</sup> 43 U.S.C. § 1334(a).

<sup>117</sup> See, e.g., *Church of the Holy Trinity v. United States*, 143 U.S. 457, 458 (1892) (interpreting a statute by looking at the plain language first).

<sup>118</sup> *United States v. Am. Trucking Ass'ns, Inc.*, 310 U.S. 534, 543 (1940).

<sup>119</sup> Ch. 345, § 12, 67 Stat. 462, 469 (codified at 43 U.S.C. § 1341(a)).

plain reading of this provision shows that Congress granted to the President the power to withdraw offshore lands from disposition through leasing. Absent in this text is any mention of the power to reverse withdrawals of Outer Continental Shelf lands and return them to leasing. Section 12(a) is titled, simply, “Reservations.” Like the provision itself, this title does not indicate any more expansive powers, such as the power to restore withdrawn lands to leasing or to modify previous withdrawals.

Offshore lands withdrawn by the President using section 12(a) are not necessarily insulated from disposition by leasing permanently because Congress retains authority over those lands. Congress has plenary authority over public lands as set forth in the Property Clause of the U.S. Constitution, and can pass legislation restoring some or all of the lands withdrawn by the President to disposition by leasing.<sup>120</sup> But the plain text of section 12(a) does not convey this authority to the President.

The legislative history of section 12(a) supports the interpretation that it was intended as a one-way lever to remove lands from disposition through mineral leasing. While there is not a great deal of legislative history addressing section 12(a), in particular, the 1953 Senate Report accompanying the bill that ultimately became OCSLA discusses “the authority of the President to withdraw certain areas of the seabed of the Continental Shelf from leasing,” but not the authority to rescind any such withdrawals.<sup>121</sup>

The Senate Report also makes clear that Congress intended section 12(a) to be invoked by the President for a variety reasons, presumably including conservation. In the Committee Amendments, section 12(a) was retitled from “National Emergency Reservations” to simply “Reservations,” and a clause at the end of it that would have tied the President’s authority to reserve land to “the interest of national security” was removed.<sup>122</sup> The explanation provided for this change reads: “The committee believes that the authority of the President to withdraw certain areas of the seabed of the Continental Shelf from leasing should *not be limited to security requirements*.”<sup>123</sup> An Assistant Attorney General likewise recommended that this limitation be deleted:

[Section 12(a)] provides that the President may withdraw and reserve unleased areas for Federal use in the interest of national security. This provision is unnecessary, since leasing is not mandatory in any case; and it *is undesirable, in that it may imply that it constitutes the only permissible reason for refusing*

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<sup>120</sup> See, e.g., Federal Land Policy and Management Act of 1976, 43 U.S.C. § 1701 (“Congress [can] exercise its constitutional authority to withdraw or otherwise designate or dedicate Federal lands . . .”).

<sup>121</sup> S. REP. NO. 83-411, at 26 (1953); see also Kevin O. Leske, “Un-Shelfing” Lands Under the Outer Continental Shelf Lands Act (OCSLA): Can a Prior Executive Withdrawal Under Section 12(a) Be Trumped by a Subsequent President?, 26 N.Y.U. ENVTL. L.J. 1, 27–31 (2017) (describing the legislative history of section 12(a)).

<sup>122</sup> S. REP. NO. 83-411, at 22, 26.

<sup>123</sup> *Id.* at 26 (emphasis added).

*to lease*. It should be omitted, or at least the final phrase, “for the use of the United States in the interest of national security,” should be deleted.<sup>124</sup>

The inaugural use of section 12(a) was President Eisenhower’s action withdrawing offshore lands from leasing to create a marine sanctuary; from the beginning, the provision was understood as allowing broad withdrawal purposes, including for preservation.<sup>125</sup>

The absence of any explicitly delegated power to rescind OCSLA section 12(a) withdrawals should be contrasted with the “two-way” power delegated to the Secretary of Commerce in the National Marine Sanctuaries Act,<sup>126</sup> passed shortly after OCSLA, in 1972.<sup>127</sup> That Act provides for the creation of national marine protected areas, and sets forth “[p]rocedures for designation and implementation” of protected marine areas that the Secretary must follow.<sup>128</sup> In describing the “terms of designation” for new marine sanctuaries, the Act provides that: “The terms of designation may be modified *only by the same procedures by which the original designation is made*.”<sup>129</sup> The terms of designation (and de-designation) of marine sanctuaries include public notice of the proposal, preparation and publication of a draft environmental impact statement and draft management plan, and at least one public hearing in the coastal area or areas that will be most affected by the proposed designation.<sup>130</sup>

The language of the National Marine Sanctuaries Act illustrates that when Congress sought to convey a multidirectional power to the executive branch, it did so explicitly and set forth specific procedures to guide both designations and de-designations. Yet even when Congress amended OCSLA in 1978, it maintained section 12(a) in its original form: without any express delegation of authority to undo prior offshore leasing withdrawals.<sup>131</sup>

In short, the plain text and limited legislative history of section 12(a) support the interpretation that Congress delegated authority to the President to withdraw areas from offshore leasing, leaving it up to the legislative branch whether to later lease some of these public lands. In this manner, Congress retains its authority as ultimate caretaker of public lands and serves as a check on potentially overzealous reservations by the executive branch.

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<sup>124</sup> *Id.* at 39 (emphasis added). Section 12(a) was originally titled section 10(a). *See id.*

<sup>125</sup> *See* Proclamation No. 3339, 3 C.F.R. § 20 (Supp. 1960) (signed March 19, 1960), *reprinted in* 54 U.S.C. § 320101 (Supp. II 2015).

<sup>126</sup> 16 U.S.C. §§ 1431–1445c (2012).

<sup>127</sup> Pub L. No. 92-532, 86 Stat. 1061 (1972).

<sup>128</sup> 16 U.S.C. § 1434.

<sup>129</sup> *Id.* § 1434(a)(4) (emphasis added).

<sup>130</sup> *See id.* § 1434(a).

<sup>131</sup> *See* Outer Continental Shelf Lands Act Amendments of 1978: Statement on Signing S. 9 into Law, 1978 PUB. PAPERS 1530, 1531 (Sept. 18, 1978).

*C. The Antiquities Act: Plain Text, Legislative History, and  
Contemporaneous Statutes*

The Antiquities Act of 1906 is one of the nation's earliest laws providing for presidential discretion to reserve public lands for protection. Section 2 of the Antiquities Act grants the President the authority to withdraw public lands for the protection of objects of historic or scientific interest. It states:

the President of the United States is hereby authorized, in his discretion, to declare by public proclamation historic landmarks, historic and prehistoric structures, and other objects of historic or scientific interest that are situated upon the lands owned or controlled by the Government of the United States to be national monuments, and may reserve as a part thereof parcels of land, the limits of which in all cases shall be confined to the smallest area compatible with proper care and management of the objects to be protected.<sup>132</sup>

The plain language is clear that when it passed the Antiquities Act, Congress delegated to the President the power to reserve federal lands in order to create national monuments. Congress did not delegate the authority to abolish or diminish monuments.

In delegating the authority to create monuments, one of the drafters' aims was to empower the President to act quickly to prevent the destruction of unique and valuable objects and resources situated within the federal government's expansive land holdings.<sup>133</sup> Scientists at the turn of the 19th century were concerned about the destruction and confiscation of unattended ruins and artifacts on federal lands.<sup>134</sup> Consistent with these concerns, some early bills leading up to the Antiquities Act's passage sought to punish vandals who disturbed ruins on public property.<sup>135</sup>

As explored more thoroughly in other scholarship, statutes passed just before and after the Antiquities Act reveal that Congress knew how to delegate the authority to modify federal land withdrawals, but chose not to do so in the Antiquities Act.<sup>136</sup> The Pickett Act of 1910<sup>137</sup> and the Forest Service Organic Act of 1897<sup>138</sup> each contain language authorizing presidential

<sup>132</sup> Antiquities Act of 1906, 34 Stat. 225 (1906). The language of the Antiquities Act was edited and re-codified in 2014 at 54 U.S.C. §§ 320301(a)–(b) with the stated intent of “conform[ing] to the understood policy, intent, and purpose of Congress in the original enactments.” Act of Dec. 19, 2014, Pub. L. No. 113-287, § 2, 128 Stat. 3094, 3094; *see* 54 U.S.C. § 320301(a)–(b) (Supp. II 2015).

<sup>133</sup> *See* HAL ROTHMAN, *AMERICA'S NATIONAL MONUMENTS: THE POLITICS OF PRESERVATION* 47–48 (1989).

<sup>134</sup> *See id.* at 6–8.

<sup>135</sup> *See, e.g., id.* at 44 (“The Lodge-Rodenberg bill also made collecting artifacts in the public domain a misdemeanor. . . . [Critics] stressed that this failed to differentiate between archeology and vandalism and made all excavators liable to prosecution . . .”).

<sup>136</sup> *See* Squillace et al., *Presidents Lack Authority*, *supra* note 16, at 57–58.

<sup>137</sup> Act of June 25, 1910, ch. 421, 36 Stat. 847 (repealed 1976).

<sup>138</sup> Act of June 4, 1897, ch. 2, 30 Stat. 11, 34 (codified as amended at 16 U.S.C. §§ 473–482, 551 (2012)).

modification of certain withdrawals of federal lands.<sup>139</sup> The contrast between the more expansive authority expressly delegated in these contemporaneous statutes—to reserve land, and then subsequently, to modify or abolish such reservations—and the lesser authority delegated in the Antiquities Act supports the interpretation that Congress intended to give the President the power to create monuments, alone.<sup>140</sup>

Moreover, when Congress passed the Federal Land Policy and Management Act in 1976, it clarified that national monuments can be revoked or modified by an act of Congress, only.<sup>141</sup> The House Committee explained that the law “would also specifically reserve to the Congress the authority to modify and revoke withdrawals for national monuments created under the Antiquities Act.”<sup>142</sup> No president, until President Trump’s 2017 actions, has reduced the size of a national monument subsequent to the passage of the Federal Land Policy and Management Act.<sup>143</sup>

Finally, the executive branch has long acknowledged the limits to the President’s authority over established national monuments. In 1938, Attorney General Cummings concluded that the Antiquities Act “does not authorize [the President] to abolish [national monuments] after they have been established.”<sup>144</sup> The opinion explained that “the reservation made by the President under the discretion vested in him by the statute *was in effect a reservation by the Congress itself*,” and that, except where Congress expressly provided, “the President thereafter was without power to revoke or rescind the reservation.”<sup>145</sup> In 1924, the Solicitor General concluded that the President lacked the authority to reduce the size of a national monument.<sup>146</sup> And as recently as 2004, the Solicitor General represented to the Supreme Court that “Congress intended that national monuments would be permanent; they can be abolished only by [an] Act of Congress.”<sup>147</sup>

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<sup>139</sup> See 16 U.S.C. § 473; Act of June 25, 1910 § 1.

<sup>140</sup> See Letter from 121 Law Professors to Ryan Zinke, Sec’y, Dep’t of the Interior, & Wilbur Ross, Sec’y, Dep’t of Commerce (July 6, 2017), <https://perma.cc/6HDY-RWN8>.

<sup>141</sup> Federal Land Policy and Management Act of 1976, 43 U.S.C. § 1714(j) (2012).

<sup>142</sup> H.R. REP. NO. 94-1163, at 9 (1976); see also Squillace et al., *Presidents Lack Authority*, *supra* note 16, at 60–61 (“An examination of [the Federal Land Policy and Management Act of 1976]’s legislative history removes any doubt that section 204(j) was intended to reserve to Congress the exclusive authority to modify or revoke national monuments.”).

<sup>143</sup> The last presidential national monument reduction, before President Trump’s two 2017 reductions, was President Kennedy’s modification of the Bandelier National Monument in 1963. See Proclamation No. 3539, 3 C.F.R. § 62 (Supp. 1963).

<sup>144</sup> Proposed Abolishment of Castle Pinckney National Monument, 39 Op. Att’y Gen. 185, 185 (1938).

<sup>145</sup> *Id.* at 187 (emphasis added).

<sup>146</sup> “Relying on a 1921 Attorney General opinion involving ‘public land reserved for lighthouse purposes,’ the Solicitor concluded that the President was not authorized to restore lands to the public domain that had been previously set aside as part of a national monument.” Squillace et al., *Presidents Lack Authority*, *supra* note 16, at 66; see also Squillace, *The Monumental Legacy*, *supra* note 79, at 559–60.

<sup>147</sup> Reply Brief for the United States in Response to Exceptions of the State of Alaska at 32 n.20, *Alaska v. United States*, 545 U.S. 75 (2005) (No. 128). This brief was filed by Acting Solicitor General Paul Clement during the Presidency of George W. Bush. *Id.* at 50.

In short, one-way levers to create national monuments and to reserve offshore lands reflect a congressional desire to allow relatively unencumbered executive branch action to protect special places, while preserving the legislative branch's prerogative over federal land management as established in the Property Clause. The one-way levers of the Antiquities Act and OCSLA section 12(a) thus maintain the traditional separation of powers between Congress and the President, which vests Congress with plenary authority over public lands.

While the statutes' plain text, legislative history, and relevant Attorney General opinions support the view that Congress conferred a one-way lever to preserve, courts interpreting these provisions should also consider the particular context of government stewardship of public lands, which can inform their understanding of the provisions.<sup>148</sup> In the spirit of this broader inquiry, this Article next examines a "procedural" rationale for the structure of these statutes, with roots in the common law public trust doctrine.

#### IV. THE PUBLIC TRUST DOCTRINE: PROTECTING PUBLIC LANDS THROUGH DEMOCRATIC DECISION MAKING

The common law public trust doctrine provides important context for a history of public lands jurisprudence in which courts demand greater justification for actions allowing development or diminishment of public lands than for protecting or withdrawing those same lands. This Part describes the Roman, English, and U.S. common law origins of the public trust doctrine, as well as how it has evolved in the United States to serve as a bedrock public lands doctrine that prioritizes democratic decision making where important public trust interests are at stake.

The public trust doctrine, broadly stated, provides that the government holds certain lands and waterways in trust for public benefit and public use. The public trust doctrine has long been held to apply to lands beneath navigable waters and tidelands, finding that such lands are "inherently the property of the public at large."<sup>149</sup> Much like national monuments, the public trust doctrine has been imbued with an almost mythic quality.<sup>150</sup> Both national monuments and the public trust doctrine fit neatly within the long-standing national narrative that certain natural and cultural treasures are common to all and worthy of lasting protection. The California Supreme

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<sup>148</sup> See, e.g., Cass R. Sunstein, *Interpreting Statutes in the Regulatory State*, 103 HARV. L. REV. 405, 454 (1989) ("[T]he interpretation of a text requires courts to refer to background norms in interpreting terms.").

<sup>149</sup> Rose, *Joseph Sax*, *supra* note 21, at 351.

<sup>150</sup> See Araiza, *supra* note 27, at 695 & n.4 (citing Richard Lazarus, *Changing Conceptions of Property and Sovereignty in Natural Resources: Questioning the Public Trust Doctrine*, 71 IOWA L. REV. 631, 701 (1986) (noting the public trust doctrine's "mystical and romantic appeal")); Carol Rose, *The Comedy of the Commons: Custom, Commerce, and Inherently Public Property*, 53 U. CHI. L. REV. 711, 730 (1986) [hereinafter Rose, *The Comedy of the Commons*] ("A particularly striking aspect of this historical pattern is the resonance that public trust doctrine has in our law, despite frailties in its original authority.").

Court articulated the government responsibility over public trust resources in *National Audubon Society v. Superior Court*<sup>151</sup>:

[T]he public trust is more than an affirmation of state power to use public property for public purposes. It is an affirmation of the duty of the state to protect the people's common heritage of streams, lakes, marshlands and tidelands, surrendering that right of protection only in rare cases when the abandonment of that right is consistent with the purposes of the trust.<sup>152</sup>

While it is primarily a doctrine of state common law, and subject to a fair amount of controversy about the extent of its reach and application,<sup>153</sup> the public trust doctrine has been recognized by the U.S. Supreme Court for well over a century.<sup>154</sup>

From a substantive standpoint, the doctrine declares certain natural resources to be property of the public at large, and certain uses to be “public trust uses,” including navigation, fishing, commerce, and recreation.<sup>155</sup> From a procedural standpoint, the doctrine imposes constraints on certain actors with respect to public trust lands and uses. Specifically, in many states, the public trust doctrine has evolved to constrain non-legislative actors from alienating or modifying public trust lands without explicit legislative authority.<sup>156</sup> This procedural aspect of the public trust doctrine likely serves a few aims. First, it vests decisions concerning commonly held public trust property with a broadly accountable democratic body, as opposed to lone actors or narrow interest groups.<sup>157</sup> Second, it ensures that when a legislative body intends to allow alienation or diminishment of public trust resources, the legislature states so explicitly.<sup>158</sup> This Article will return to these two aims in Part V, which describes how the public trust doctrine should serve as a background principle, or canon of interpretation, framing our

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<sup>151</sup> 658 P.2d 709 (Cal. 1983).

<sup>152</sup> *Id.* at 724.

<sup>153</sup> For an overview of the debate surrounding the doctrine, see Charles F. Wilkinson, *The Headwaters of the Public Trust: Some Thoughts on the Source and Scope of the Traditional Doctrine*, 19 ENVTL. L. 425, 426 (1989) [hereinafter Wilkinson, *Headwaters of the Public Trust*] (explaining that the doctrine focuses on water-based property, valuable for both economic and conservation reasons, and that the doctrine's application can cause a quick “collision between two treasured sets of expectancy interests,” private property owners and the general public); see also Rose, *The Comedy of the Commons*, *supra* note 150, at 713–14 (describing how modern courts have expanded the public trust doctrine to apply to a new public trust use, recreation, and geographically, to the “area from the tidelands to the dry sand areas landward of the high-tide mark”). *But see id.* at 722 (“[T]he recent judicial expansions of public access, like the academic literature, often simply refer us back to traditional doctrines.”).

<sup>154</sup> See *Ill. Central R.R. v. Illinois (Illinois Central)*, 146 U.S. 387, 436–37 (1892).

<sup>155</sup> See Wilkinson, *Headwaters of the Public Trust*, *supra* note 153, at 465; see also Rose, *The Comedy of the Commons*, *supra* note 150, at 728 n.69 (“The main additional contenders are now recreation and environmental preservation.”).

<sup>156</sup> See Sax, *The Public Trust Doctrine*, *supra* note 20, at 563.

<sup>157</sup> *Id.* at 558.

<sup>158</sup> See *id.* at 502 (“[The court] will view with skepticism any dispositions of trust lands and will not allow them unless it is perfectly clear that the dispositions have been fully considered by the legislature.”).

understanding of public land preservation statutes including the Antiquities Act and OCSLA section 12(a).

*A. The Public Trust Doctrine in Roman and English Common Law*

A full recitation of the Roman law origins of the public trust doctrine is beyond the scope of this Article and well covered in other works.<sup>159</sup> Nonetheless, an overview of key developments in Roman and English common law is instructive in introducing the natural resources traditionally protected by the doctrine and the corresponding restraints that the doctrine imposed upon the monarch and other government actors.

The public trust doctrine originated under Roman law as the principle that a sovereign state holds public lands—particularly the seabed and lands affected by the tides—in trust for the benefit of the public. “This [doctrine] permitted the public to use the ocean and the seashore for any noninjurious purpose.”<sup>160</sup> Some public interests, such as navigation and fishing, were considered public uses protected from infringement by the sovereign and other actors.<sup>161</sup> In common areas like the sea, seashore, highways, and running water, “perpetual use was dedicated to the public.”<sup>162</sup>

The English monarch originally claimed a private interest in the land beneath the sea, including the power to grant this land to individuals, removing it from the public domain.<sup>163</sup> Around the time of the Magna Carta (1215), the law began to recognize additional public rights in the seabed and seashore.<sup>164</sup> Subsequently, the monarch held two interests in the seashore and tidal lands: the “jus privatum” and the “jus publicum.”<sup>165</sup>

The jus privatum was the proprietary interest in the seabed and seashore which the sovereign had previously possessed.<sup>166</sup> “This interest . . . was subordinate to the jus publicum, an interest which the [monarch] henceforth held in his capacity as representative of the people, for the

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<sup>159</sup> See, e.g., Joseph L. Sax, *Liberating the Public Trust Doctrine from Its Historical Shackles*, 14 U.C. DAVIS L. REV. 185, 186 n.6 (1980) (citing JUSTINIAN, INSTITUTES, 2.1.1–6 (J.B. Moyle trans., Oxford Univ. Press rev. ed. 1911)); Sax, *The Public Trust Doctrine*, *supra* note 20, at 475–78; Heather J. Wilson, Comment, *The Public Trust Doctrine in Massachusetts Land Law*, 11 B.C. ENVTL. AFF. L. REV. 839, 840–43 (1984) [hereinafter Wilson, *Massachusetts*]; see also James L. Huffman, *Speaking of Inconvenient Truths—A History of the Public Trust Doctrine*, 18 DUKE ENVTL. L. & POL’Y F. 1, 12–19 (2007).

<sup>160</sup> Wilson, *Massachusetts*, *supra* note 159, at 840. “Roman writers discuss[ed] public activities which were permitted upon the seashore, such as ‘fishing, navigating and taking water.’” *Id.* at 843.

<sup>161</sup> *Id.*

<sup>162</sup> Sax, *The Public Trust Doctrine*, *supra* note 20, at 475 (quoting W.A. HUNTER, ROMAN LAW 311 (J. Ashton Cross trans., 4th ed. 1903)).

<sup>163</sup> *Id.*

<sup>164</sup> Wilson, *Massachusetts*, *supra* note 159, at 844 (citing R. HALL, ESSAY ON THE RIGHTS OF THE CROWN AND THE PRIVILEGES OF THE SUBJECT IN THE SEA SHORES OF THE REALM 43 n.(v) (2d ed. 1875)).

<sup>165</sup> *Id.* The “public right” to certain lands was called the “jus publicum” in Roman law. See Rose, *The Comedy of the Commons*, *supra* note 150, at 713.

<sup>166</sup> Wilson, *Massachusetts*, *supra* note 159, at 844.

protection of their common navigational and fishing rights.”<sup>167</sup> The jus publicum could be alienated only by an act of Parliament.<sup>168</sup> Thus, these public lands were to be spared from potential total elimination at the hands of the monarch.

As the U.S. Supreme Court explained in *Appleby v. City of New York*, in English common law:

[T]he powers of the king are limited, and he can not now deprive his subjects of these rights by granting the public navigable waters to individuals. But there can be no doubt of the right of parliament in England, or the legislature of this state, to make such grants, when they do not interfere with the vested rights of particular individuals. . . . Hence the legislature as the representatives of the public may restrict and regulate the exercise of those rights in such manner as may be deemed most beneficial to the public at large; provided they do not interfere with vested rights which have been granted to individuals.<sup>169</sup>

Therefore, notwithstanding the restraints the public trust doctrine imposed upon the monarch, it arguably remained within the authority of Parliament to enlarge or diminish public trust rights for another legitimate public purpose.<sup>170</sup>

This structure has modern analogs in some U.S. states’ public trust doctrines that persist today, which place additional constraints on non-legislative actors with respect to public land management. OCSLA section 12(a) and the Antiquities Act, in reserving to the legislature the ability to remove protected land status once granted, parallel this structure and evince a “procedural” or “democratic” rationale for their one-way lever structure.

### *B. The Public Trust Doctrine in the United States*

The history of the public trust doctrines in many eastern U.S. states extends back to before statehood. When the original thirteen colonies were

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<sup>167</sup> *Id.*; see also *Shively v. Bowlby*, 152 U.S. 1, 57 (1894) (“At common law, the title and the dominion in lands flowed by the tide were in the King for the benefit of the nation.”); *Arnold v. Mundy*, 6 N.J.L. 1, 71–72 (1821) (“[T]he wisdom of that law has placed it in the hands of the sovereign power, to be held, protected, and regulated for the common use and benefit. . . . This principle, with respect to rivers and arms of the sea, is clearly maintained in the case of the royal fishery upon the Banne . . . .”); STUART A. MOORE, A HISTORY OF THE FORESHORE AND THE LAW RELATING THERETO, AND HALL’S ESSAY ON THE RIGHTS OF THE CROWN IN THE SEA-SHORE 389 (WM. W. Gaunt & Sons, Inc. 1993) (1888) (“[F]or the jus privatum, that is acquired to the subject either by patent or prescription, must not prejudice the jus publicum.”).

<sup>168</sup> *Wilson, Massachusetts*, *supra* note 159, at 844; see also *Appleby v. City of New York*, 271 U.S. 364, 382 (1926); *Martin v. Waddell*, 41 U.S. (16 Pet.) 367, 410–12 (1842); *Commonwealth v. Alger*, 61 Mass. (7 Cush.) 53, 83 (1851). *But see* *Wilkinson, Headwaters of the Public Trust*, *supra* note 153, at 431 n.31 (citing a conflicting view from R. CLARK, WATERS AND WATER RIGHTS 101 (1970)).

<sup>169</sup> *Appleby*, 271 U.S. at 382 (quoting Chancellor Walworth).

<sup>170</sup> See *id.*; *Sax, The Public Trust Doctrine*, *supra* note 20, at 476; see also *Arnold*, 6 N.J.L. at 50 (noting that the King of England never had the right in his sovereign capacity to grant away “the common property” in tidelands and navigable waterways, so neither did the colonies nor U.S. states).

settled, the Crown granted the title to and trusteeship of tidelands in the colonies to the companies chartered to settle those colonies.<sup>171</sup> A portion of the tidelands passed into private ownership, subject to the provision that the owners not interfere with “the rights of the public to have the benefit of the waters for navigation, fishing and fowling.”<sup>172</sup> After the American Revolution, the states became entitled to the land under their navigable waters, subject to the public trust.<sup>173</sup> The public trust doctrine passed to new states of the Union under the Equal Footing Doctrine.<sup>174</sup> The states thus continue to act as trustee of public trust resources and of the public’s rights to navigation, fishing, and other uses.<sup>175</sup>

The “lodestar” of the public trust doctrine is the U.S. Supreme Court’s 1892 decision in *Illinois Central Railroad v. Illinois*.<sup>176</sup> In *Illinois Central*, the Supreme Court issued an opinion that provided a legal basis for later state pronouncements and reaffirmations of their common law public trust doctrines.<sup>177</sup> Illinois had granted more than 1,000 acres underlying Lake Michigan to Illinois Central Railroad for harbor and commercial development.<sup>178</sup> A few years later, the state sued to invalidate its original grant.<sup>179</sup> The Supreme Court ruled in the state’s favor, holding that the original grant was voidable because navigable waterways, including those in inland navigable lakes and rivers, are held by the states “in trust for the people” so that “that they may enjoy the navigation of the waters, carry on commerce over them, and have liberty of fishing therein, freed from the obstruction or interference of private parties.”<sup>180</sup> The Court found that while Illinois could convey small parcels of the seabed or shore that would not injure the public trust, granting almost the entire waterfront of Chicago would, in effect, abdicate the state’s legislative authority over navigation, and the public trust doctrine does not permit such an abdication.<sup>181</sup>

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<sup>171</sup> See, e.g., *Bos. Waterfront Dev. Corp. v. Commonwealth*, 393 N.E.2d 356, 359 (Mass. 1979).

<sup>172</sup> *Crocker v. Champlin*, 89 N.E. 129, 130 (1909).

<sup>173</sup> See Robin Kundis Craig, *A Comparative Guide to the Eastern Public Trust Doctrines: Classifications of States, Property Rights, and State Summaries*, 16 PENN ST. ENVTL. L. REV. 1, 6 (2007) [hereinafter Craig, *Eastern Public Trust*].

<sup>174</sup> *Id.* Under the Equal Footing Doctrine, each state succeeded on an equal footing with all others to the rights of sovereignty, jurisdiction, and eminent domain. See *Pollard’s Lessee v. Hagan*, 44 U.S. (3 How.) 212, 223 (1845); *Shively*, 152 U.S. 1, 26 (1893) (noting that states admitted into Union after adoption of the Constitution granted “the same rights as the original States in tide waters, and in the lands below the high water mark”). Prior to each state’s incorporation, its submerged lands were held in trust by the federal government. Once the titles to such lands were vested in a state, federal sovereignty over those lands was extinguished. See *Summa Corp. v. California ex rel. State Lands Comm’n*, 466 U.S. 198, 205 (1984).

<sup>175</sup> Sax, *The Public Trust Doctrine*, *supra* note 20, at 475–76.

<sup>176</sup> 146 U.S. 387 (1892); see Sax, *The Public Trust Doctrine*, *supra* note 20, at 489 (calling *Illinois Central* the “lodestar” of the public trust doctrine).

<sup>177</sup> Rose, *Joseph Sax*, *supra* note 21, at 351–52.

<sup>178</sup> Sax, *The Public Trust Doctrine*, *supra* note 20, at 489.

<sup>179</sup> *Id.*

<sup>180</sup> *Illinois Central*, 146 U.S. at 452.

<sup>181</sup> *Id.* at 452–53.

*C. The Public Trust Doctrine as a Theory of Public Land Management Best Effectuated by Legislatures*

In 1970, Professor Joseph Sax revived academic and judicial interest in the public trust doctrine through the publication of his seminal article, *The Public Trust Doctrine in Natural Resource Law: Effective Judicial Intervention*.<sup>182</sup> Sax described the “special regulatory obligations over shorelands” that states possess, “which are inconsistent with large-scale private ownership.”<sup>183</sup> Sax found that the public trust doctrine should affect how courts consider actions by governments that could convey public trust resources to private parties. He identified the “central substantive thought in public trust litigation” as:

When a state holds a resource which is available for the free use of the general public, a court will look with considerable skepticism upon *any* governmental conduct which is calculated *either* to reallocate that resource to more restricted uses *or* to subject public uses to the self-interest of private parties.<sup>184</sup>

Sax’s review of judicial public trust cases led to his conclusion that decisions potentially affecting public trust interests should “be made by a body with a constituency broad enough to be responsive to the whole range of significant potential users.”<sup>185</sup> And as a result, “court[s] should look skeptically at programs which infringe broad public uses in favor of narrower ones,”<sup>186</sup> such as reducing national monument boundaries to lease land to private developers for fossil fuel production.

Sax thus read the doctrine as a theory of public land management best carried out by state legislatures, and pointed to states like Massachusetts and New York which embraced this “procedural” application of the doctrine.<sup>187</sup> The theory underlying this principle is that legislatures answer to a broader constituency than municipal actors, and undertake a more deliberative and open process that guards against rash, ill-informed, or corrupt decisions with respect to public natural resources.<sup>188</sup> Sax was concerned about bad decisions being made by local governments or lone actors that may appear “rational from the atomistic perspective of the actor, but which, from the perspective of the larger community, is highly disadvantageous.”<sup>189</sup> As Professor Carol Rose noted, “Sax effectively treated the public trust as a common-law version of the then-novel ‘hard look’ doctrine for environmental impacts. . . . [T]he public trust doctrine required

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<sup>182</sup> See generally Sax, *The Public Trust Doctrine*, *supra* note 20.

<sup>183</sup> *Id.* at 489.

<sup>184</sup> *Id.* at 490.

<sup>185</sup> *Id.* at 560–61.

<sup>186</sup> *Id.* at 491.

<sup>187</sup> *Id.* at 483, 492; see also Wilkinson, *The Public Trust*, *supra* note 27, at 310 (discussing required legislative authorization for administrative agencies to use public resources to promote private gain).

<sup>188</sup> Sax, *The Public Trust Doctrine*, *supra* note 20, at 490–91, 534.

<sup>189</sup> *Id.* at 534.

the collection of adequate information, public participation in decisions, informed and accountable choices, and close scrutiny of private giveaways of environmental resources.”<sup>190</sup>

Furthermore, Rose has described how the public trust doctrine emerged as a way to protect certain common natural resources that were more socially valuable as common resources than as privately owned resources: public lakes and rivers allow commerce and confer myriad public benefits that would not be possible in a different property regime.<sup>191</sup> Thus, the doctrine serves to protect certain common property, held by disparate “owners,” or the “unorganized public.”<sup>192</sup> Given the political weakness of the unorganized public, the public trust doctrine protects broadly held social values that enhance public sociability, such as commerce on the waterways, and more recently, recreation in natural areas.<sup>193</sup>

Many states, through laws or common law jurisprudence, have ratified a “procedural” or “democratic” aspect of the public trust doctrine by requiring state legislatures to explicitly approve any potential alienation or modification of trust resources. For example, in Massachusetts, the land between the high and low water marks has traditionally been subject to the public trust.<sup>194</sup> Common law public trust doctrine jurisprudence in Massachusetts has settled on the principle that a change in the use of public trust lands, or their conveyance to private parties, is impermissible without a clear showing of legislative approval.<sup>195</sup> As a result, “state agencies, municipalities, and other governmental entities [must] obtain legislative authorization before altering existing uses of public trust lands,” and they are limited in their ability to directly regulate or to abrogate public trust lands.<sup>196</sup> Massachusetts courts have tolerated some legislative alienation of public lands, but have looked skeptically at claims that this authority can be delegated.<sup>197</sup>

In New York, the common law public trust doctrine has evolved to encompass not only navigable-in-fact waterways and tidelands, but the

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<sup>190</sup> Rose, *Joseph Sax*, *supra* note 21, at 355.

<sup>191</sup> Rose, *The Comedy of the Commons*, *supra* note 150, at 721, 723, 775–81.

<sup>192</sup> *Id.* at 721.

<sup>193</sup> *See id.* at 723, 779.

<sup>194</sup> *Bos. Waterfront Dev.*, 393 N.E.2d 356, 359–60 (Mass. 1979). The doctrine has evolved to allow public access to the ocean through the tidelands and shore land, as well as access to “great ponds,” which otherwise might be blocked by private land ownership. *Id.* at 367.

<sup>195</sup> *See, e.g., Trio Algarvio, Inc. v. Comm’r of the Dep’t of Env’tl. Prot.*, 795 N.E.2d 1148, 1151 (Mass. 2003); *Gould v. Greylock Reservation Comm’n*, 215 N.E.2d 114, 126 (Mass. 1966) (“In addition to the absence of any clear or express statutory authorization of as broad a delegation of responsibility by the Authority as is given by the management agreement, we find no express grant to the Authority of power to permit use of public lands and of the Authority’s borrowed funds for what seems, in part at least, a commercial venture for private profit.”).

<sup>196</sup> Wilson, *Massachusetts*, *supra* note 159, at 841; *see Craig, Eastern Public Trust*, *supra* note 173, at 64–68 (giving an overview of Massachusetts’s public trust doctrine and its application).

<sup>197</sup> *See, e.g., Moot v. Dep’t of Env’tl. Prot.*, 861 N.E.2d 410, 420 (Mass. 2007) (holding that “[t]he rights of the public in Commonwealth tidelands . . . cannot be relinquished by departmental regulation”).

protection of inland public parkland.<sup>198</sup> While the precise origin of the evolution of the doctrine to parkland is unclear, New York public trust cases have long held that public parkland cannot be sold by cities or municipalities without state legislative authorization.<sup>199</sup> As early as 1871, in *Brooklyn Park Commissioners v. Armstrong*,<sup>200</sup> the court described the City of Brooklyn as a trustee holding park lands for the purpose of public park use.<sup>201</sup> The court held that the City could not sell or convey land held in trust for public use without legislative sanction.<sup>202</sup> As recently as 2001, the New York Court of Appeals reaffirmed the public trust doctrine and held that disruption of public access to a park was a non-park use requiring state legislative authorization.<sup>203</sup> Therefore, the public trust doctrine in New York operates as a procedural constraint on non-legislative actors who could otherwise impair public trust lands or uses.

In New York, “[g]reat ramifications flow from a determination that a proposed activity is a non-park use,” as the process of obtaining state legislative authorization for “parkland alienation” often takes more than a year and can attract robust opposition from local communities and their legislators.<sup>204</sup> New York generally passes fewer than twenty bills each year authorizing parkland alienation.<sup>205</sup> The state legislature regularly cites its “on-going effort to protect the public trust as it relates to the use of parklands,” and its policy of preserving open space.<sup>206</sup> Therefore, a “procedural” public trust doctrine has been integrated into the state legislative process, serving

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<sup>198</sup> See, e.g., Craig, *Eastern Public Trust*, *supra* note 173, at 85–86 (listing state public trust protections); *2002 Annual Report*, N.Y. ST. ASSEMBLY (Dec. 15, 2002), <https://perma.cc/FY8M-YLDX> (“Case law has been established which requires that any use of public parkland for non-parkland purposes must be authorized by the New York State Legislature.”).

<sup>199</sup> Cyane Gresham, Note, *Improving Public Trust Protections of Municipal Parkland in New York*, 13 *FORDHAM ENVTL. L.J.* 259, 267–68 (2002).

<sup>200</sup> 45 N.Y. 234 (1871).

<sup>201</sup> *Id.* at 234–35 (“The title of the city, thus acquired, is impressed with a trust to hold the lands for the public use as a park, and it cannot, of itself, convey or dispose of them in contravention of the trust; but it is within the power of the legislature to relieve the city from such trust, and to authorize a sale, free therefrom.”).

<sup>202</sup> *Id.* at 248. In 1920, the court in *Williams v. Gallatin* reached a similar result. 128 N.E. 121, 122 (N.Y. 1920) (“A park is a pleasure ground set apart for recreation of the public. . . . It need not, and should not, be a mere field or open space, but no objects, however worthy, . . . which have no connection with park purposes, should be permitted to encroach upon it without legislative authority plainly conferred. . . .”).

<sup>203</sup> *Friends of Van Cortlandt Park v. City of New York*, 750 N.E.2d 1050, 1053–55 (N.Y. 2001).

<sup>204</sup> Gresham, *supra* note 199, at 282–85.

<sup>205</sup> See *id.* at 285 (counting less than twenty bills each year from 1990–2000). For years 2014–2016, a review of New York State Assembly Local Government Committee annual reports shows that fewer than twenty parkland alienation bills were passed each year. See COMM. ON LOCAL GOV'TS, N.Y. STATE ASSEMBLY, 2016 ANNUAL REPORT 6–8 (2016), <https://perma.cc/TGT9-ARA7> [hereinafter 2016 ANNUAL REPORT]; COMM. ON LOCAL GOV'TS, N.Y. STATE ASSEMBLY, 2015 ANNUAL REPORT 10–12 (2015), <https://perma.cc/N8C4-BRSB>; COMM. ON LOCAL GOV'TS, N.Y. STATE ASSEMBLY, 2014 ANNUAL REPORT 11–13 (2014), <https://perma.cc/A5P2-GYDP>. In general, the state encourages substitution of equivalent land (based on acreage or market value) for discontinued parkland. See, e.g., 2016 ANNUAL REPORT, *supra*, at 6.

<sup>206</sup> *2002 Annual Report*, *supra* note 198. This language appears in several of the Committee's annual reports. See, e.g., 2016 ANNUAL REPORT, *supra* note 205, at 6.

as a check on potential impairment of public trust rights by municipal actors and others outside the legislature.

Other states have embraced a similar approach to public trust lands management.<sup>207</sup> For example the California Supreme Court has articulated: “Nothing short of a very explicit provision . . . would justify us in holding that the Legislature intended to permit the shore of the ocean, between high and low-water mark, to be converted into private ownership.”<sup>208</sup>

Notably, some courts and scholars have found that even legislatures cannot alienate certain public trust lands except in furtherance of a “trust” purpose.<sup>209</sup> Thus, notwithstanding the distinction between legislatures and other actors evident in the history of public trust doctrine jurisprudence, even legislatures can be limited by the doctrine, as the Illinois legislature was in *Illinois Central*, when they do not adequately protect public trust values.<sup>210</sup>

In short, the common law public trust doctrine has long been interpreted by several states to constrain actions that threaten to alienate or diminish public trust resources. State common law jurisprudence has evolved to judicially ratify constraints on non-legislative actors with respect to public trust land management, while also serving as a backstop against complete legislative abdication of public trust duties. In this manner, the public trust doctrine supplies a procedural and democratic rationale for the structure of the Antiquities Act and OCSLA section 12(a): in limiting presidential power to a one-way lever to conserve public resources,

<sup>207</sup> For example, the Florida constitution has provided since 1970 that land under navigable waters

is held by the state, by virtue of its sovereignty, in trust for all the people. Sale of such lands may be authorized by law, but only when in the public interest. Private use of portions of such lands may be authorized by law, but only when not contrary to the public interest.

FLA. CONST. art. X, § 11. Alabama has longstanding judicial restrictions on alienation by municipalities. *See* *Douglass v. City Council of Montgomery*, 24 So. 745, 746 (Ala. 1898) (holding that municipalities “cannot of course, dispose of property of a public nature, in violation of the trusts upon which it is held”). New Jersey allows the state legislature to convey public trust land only “in furtherance of the purposes of the doctrine.” *Borough of Neptune City v. Borough of Avon-by-the-Sea*, 294 A.2d 47, 54 (N.J. 1972).

<sup>208</sup> *Kimball v. Macpherson*, 46 Cal. 103, 108 (1873).

<sup>209</sup> *See* Daniel R. Coquillette, *Mosses from an Old Manse: Another Look at Some Historic Property Cases About the Environment*, 64 CORNELL L. REV. 761, 811–14 (1979) (criticizing Sax and arguing that the public may have property rights that restrain the legislature from alienating property except in furtherance of “trust” purposes); Rose, *The Comedy of the Commons*, *supra* note 150, at 721 n.39 (not making this claim directly, but citing, *inter alia*, Coquillette, *supra*); *see also* *City of Berkeley v. Superior Court*, 606 P.2d 362, 364–65, 369 (Cal. 1980); Patrick Deveney, *Title, Jus Publicum, and the Public Trust: An Historical Analysis*, 1 SEA GRANT L.J. 13, 52–54 (1976) (describing the origin and transformation of the public trust doctrine in the United States); Leonard R. Jaffee, *The Public Trust Doctrine Is Alive and Kicking in New Jersey Tidalwaters: Neptune City v. Avon-by-the-Sea—A Case of Happy Atavism?*, 14 NAT. RESOURCES J. 309, 318, 334–35 (1974) (defending the claim that tidewater resources are property of New Jersey citizens, and therefore beyond legislative authority to alienate).

<sup>210</sup> *See Illinois Central*, 146 U.S. 387, 452–54 (1892).

presidents cannot diminish protected common property. The structure of OCSLA section 12(a) and the Antiquities Act are squarely in line with the public trust doctrine's restraints on impairment of public lands by non-legislative actors. The President's "atomistic" views about national monuments and other shared natural resources should not be the final say with respect to long-term public use and enjoyment of them. Too much of our common natural, historical, and cultural legacy is at stake, especially when removing protections would open these lands to private development.

The next Part explains how courts can use the public trust doctrine as an interpretive aid to understand the structure of the Antiquities Act and OCSLA section 12(a). As a canon of interpretation, the public trust doctrine would frame the analysis in favor of public trust values and preservation.

#### V. THE PUBLIC TRUST DOCTRINE AS A CANON OF STATUTORY INTERPRETATION FOR PUBLIC LAND STATUTES

Beyond proving an illuminating analogy, the public trust doctrine should serve as a background principle to inform our understanding and interpretation of public land statutes. As a background principle or canon of interpretation, the public trust doctrine would lack independent legal effect, but would act as an "interpretive aid" for other public lands laws or regulations.<sup>211</sup> In order to effectuate the democratic values on which the doctrine is based, the public trust doctrine should serve as a particular kind of interpretative rule—requiring a "clear statement" from the legislature before recognizing any right to impair or diminish public trust values. Thus situated, a public trust doctrine canon of interpretation would confirm that the Antiquities Act and OCSLA section 12(a) confer a one-way lever in the direction of preservation to the President.

Canons of statutory interpretation have long been used by courts to assist in interpreting statutes and regulations.<sup>212</sup> They have also been criticized for their ubiquity and diversity, which renders their usefulness as an interpretive aid to courts less clear.<sup>213</sup> Most famously, Karl Llewellyn noted that for nearly every canon in circulation, another canon can be found which states the opposite principle.<sup>214</sup> Despite these critiques, canons are frequently used and cited by courts, and a legal literature has developed with

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<sup>211</sup> See Araiza, *supra* note 27, at 697 (proposing use of the public trust doctrine as a canon rather than a hard rule); David H. Getches, *Managing the Public Lands: The Authority of the Executive to Withdraw Lands*, 22 NAT. RESOURCES J. 279, 286–87 (1982); Wilkinson, *The Public Trust*, *supra* note 27, at 273–74, 276, 311–13.

<sup>212</sup> See Sunstein, *supra* note 148, at 453 ("To a large degree, interpretive principles—including the traditional 'canons'—serve the same function in public law. They too help judges to construe both statements and silences; they too should not be seen as the intrusion of controversial judgments into 'ordinary' interpretation." (footnote omitted)).

<sup>213</sup> See *id.* at 451–52.

<sup>214</sup> See Karl N. Llewellyn, *Remarks on the Theory of Appellate Decision and the Rules or Canons About How Statutes Are To Be Construed*, 3 VAND. L. REV. 395, 395–96 (1950) (noting several juxtaposed canons); see also Araiza, *supra* note 27, at 703.

respect to a normative framework for analyzing canons of construction.<sup>215</sup> Professor William Eskridge has set forth normative evaluative principles for canons of statutory interpretation.<sup>216</sup> As Eskridge has observed, interpretive rules that cut across statutes can assist rule-of-law values like predictability and objectivity, democratic values, and widely held public values.<sup>217</sup>

In the early 1980s, public lands scholars Charles Wilkinson and David Getches argued that the public trust doctrine supports the principle that courts should demand greater justification for administrative decisions opening or allowing development on public lands than for protecting or withdrawing the same lands. Wilkinson urged that the doctrine be accepted as a means of construing the obligations of federal agencies under public land laws.<sup>218</sup> He suggested that “[i]f there are unresolved questions on the face of statutes, courts should assume that Congress intended to protect and preserve the public resources as a trustee would.”<sup>219</sup> Writing decades before the present controversy over national monuments and offshore leasing moratoria, Wilkinson noted that such a canon of construction could assist courts in determining the extent of protection afforded to wildlife, public recreation, aesthetic opportunities, stream flows, and more.<sup>220</sup> Judicial interpretation would point in the direction of protection and preservation if courts were to construe public lands and environmental statutes to effectuate Congress’s intent to act as trustee with the duty of preserving the public’s resources.<sup>221</sup>

Getches likewise described how the public trust doctrine could be used akin to a canon of construction:

The theory is that public lands are to be held and managed consistently with a trust implied from the high standards set for stewardship of federal lands in modern statutes. Thus, as gaps must be filled and vague statutes interpreted, the context is to be one of protection of the public interest in federal lands and resources.<sup>222</sup>

Writing more recently, Professor William Araiza proposed that the doctrine be used as an interpretive canon to assist in judicial interpretation of statutes and administrative regulations.<sup>223</sup> The doctrine as a canon of interpretation would be “parasitic” on the underlying statute or regulation,

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<sup>215</sup> See, e.g., William N. Eskridge, Jr., *The New Textualism and Normative Canons*, 113 COLUM. L. REV. 531, 552, 576 (2013) (reviewing ANTONIN SCALIA & BRYAN A. GARNER, *READING LAW: THE INTERPRETATION OF LEGAL TEXTS* (2012)).

<sup>216</sup> *Id.* at 576.

<sup>217</sup> *Id.* at 576–81; see also Lisa Heinzerling, *The Power Canons*, 58 WM. & MARY L. REV. 1933, 1980–81 (2017) (citing Eskridge and applying his normative framework to Supreme Court pronouncements).

<sup>218</sup> Wilkinson, *The Public Trust*, *supra* note 27, at 311–13.

<sup>219</sup> *Id.* at 312.

<sup>220</sup> *Id.*

<sup>221</sup> *Id.* at 312–13.

<sup>222</sup> Getches, *supra* note 211, at 334.

<sup>223</sup> Araiza, *supra* note 27, at 698.

meaning that it would not expand any right or confer any freestanding authority, but would assist in construing the underlying statute and favor the public trust value.<sup>224</sup> As Araiza writes: “The argument is that the principle underlying the public trust doctrine—that ‘social’ uses of natural resources generate benefits that merit protection—is so important that it warrants consideration when courts construe laws or review government actions that affect those uses.”<sup>225</sup> Other scholars have called for a broader “green canon of construction” that would extend beyond the narrow canon that I propose here.<sup>226</sup>

While a public trust canon could take various forms, one of the ways in which it could function is as a “clear statement” requirement.<sup>227</sup> In its strongest version, a clear statement requirement is a rule of narrow statutory construction that rejects interpretations that override “substantive values embodied in the rule, unless the statute explicitly so provides.”<sup>228</sup>

A clear statement canon of construction would require legislature to be specific when it wants to confer a certain power or reach a particular result.<sup>229</sup> It also ensures that adequate attention will be paid by courts to the interests that motivated the legislation at issue. The Supreme Court has used a clear statement canon of construction on numerous occasions before interpreting a statute to impose requirements that would otherwise break with overriding statutory purpose.<sup>230</sup> As Professor Cass Sunstein has

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<sup>224</sup> *Id.* at 718–19.

<sup>225</sup> Araiza, *supra* note 27, at 704 (footnote omitted).

<sup>226</sup> Professor Dan Farber has described how an existing federal law, the National Environmental Policy Act (NEPA), provides textual support for a “green canon of construction.” DANIEL A. FARBER, *ECO-PRAGMATISM: MAKING SENSIBLE ENVIRONMENTAL DECISIONS IN AN UNCERTAIN WORLD* 125–27 (1999). NEPA section 102 provides that: “The Congress authorizes and directs that, to the fullest extent possible: (1) the policies, regulations, and *public laws* of the United States shall be *interpreted* and administered in accordance with the policies set forth in this chapter.” 42 U.S.C. § 4332 (emphasis added). Those policies are listed in NEPA section 101 and include, “fulfill[ing] the responsibilities of each generation as trustee of the environment for succeeding generations” and “preserv[ing] important historic, cultural, and natural aspects of our national heritage.” *Id.* § 4331(b). Farber argues that this language can be viewed as establishing a “green canon of construction” that judges should apply in interpreting ambiguous environmental and public land statutes. FARBER, *supra*.

<sup>227</sup> *See id.* at 721.

<sup>228</sup> William D. Popkin, *Law-Making Responsibility and Statutory Interpretation*, 68 *IND. L.J.* 865, 880–81 (1993); *see also* Michael E. Solimine, *Rethinking Exclusive Federal Jurisdiction*, 52 *U. PITT. L. REV.* 383, 385 (1991) (noting that Justice Scalia’s concurrence in *Taffin v. Levitt*, 493 U.S. 455, 469–473 (1990), argued that the presumption in favor of concurrent federal and state jurisdiction should only be considered rebutted if Congress explicitly provided for exclusive federal jurisdiction in the statutory text, or in other words, provided a clear statement).

<sup>229</sup> *See* Sunstein, *supra* note 148, at 457–58 (“Some principles designed to fulfill institutional goals require a ‘clear statement’ before courts will interpret a statute to disrupt time-honored or constitutionally grounded understandings about proper governmental arrangements. Clear-statement principles force Congress expressly to deliberate on an issue and unambiguously to set forth its will; they commonly appear in statutory interpretation as a subset of the category of interpretive norms.”).

<sup>230</sup> Clear statement rules are commonly applied in federalism cases. For example, in *Atascadero State Hospital v. Scanlon*, 473 U.S. 234 (1985), the Supreme Court stated that Congress may abrogate the states’ Eleventh Amendment immunity “only by making its intention

explained, a clear statement canon is similar to a principle in favor of narrowing agency discretion when there is any doubt as to statutory authority, as such a principle “works against regulatory pathologies produced by factional power or self-interested behavior of bureaucrats.”<sup>231</sup>

Treating the public trust doctrine as a “clear statement” canon of interpretation for public land preservation statutes makes sense, given how the doctrine has developed in some states to require, quite literally, a clear statement from legislatures before allowing the modification or impairment of public trust lands or trust uses.<sup>232</sup> This is more than mere word play; a public trust canon of construction that requires a clear statement from Congress before accepting an interpretation that would upset statutory purpose would serve to protect socially valuable common resources and the interests of disparate resource owners, like the unorganized public, which Rose identified as underpinning the public trust doctrine.<sup>233</sup> Moreover, a clear statement public trust canon would guard against the abuses or biases of lone actors, which Sax identified as a concern motivating the doctrine,<sup>234</sup> as well as factional or bureaucratic self-interest.<sup>235</sup>

Running a potential public trust doctrine canon of interpretation through Eskridge’s normative framework for evaluation, as a clear statement principle, the canon would promote objectivity, at least in part, as it would not substitute any interest groups’ views for another; it simply requires a clear statement before interpreting a statute to infringe on pre-existing public land protections. The canon would serve democratic values, as it would vest primary authority for public land decision making with the most democratic of the three branches, Congress, unless the statute explicitly indicated otherwise. Finally, the canon would protect widely shared public values, such as public land preservation. Indeed, the public trust doctrine is premised on the notion that certain lands and resources are common to all, and incompatible with private ownership and exploitation.

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unmistakably clear in the language of the statute.” *Id.* at 242. This canon of construction, the Court explained, was dictated by “[t]he fundamental nature of the interests implicated by the Eleventh Amendment.” *Id.*; see Ernest A. Young, *The Rehnquist Court’s Two Federalisms*, 83 TEX. L. REV. 1, 16 (2004) (“The [Supreme] Court’s less flashy clear statement rules may be an even more important set of examples. Those rules enhance the political and procedural checks on federal lawmaking in a number of sensitive areas, including regulation of traditional state functions, abrogation of state sovereign immunity, imposition of conditions on federal funding, and preemption of state law.”); see also Solimine, *supra* note 228, at 401–02, nn.122–27.

<sup>231</sup> Sunstein, *supra* note 148, at 458.

<sup>232</sup> See discussion *supra* Part IV. And even then, legislatures themselves may be unable to diminish or alienate public trust resources where doing so would be incompatible with protecting the public’s interest in the lands and waters remaining. See *Illinois Central*, 146 U.S. 387, 452–53 (1892) (explaining that State control over navigable waters is “title held in trust for the people of the State,” which requires legislators to act in the public’s interest when enacting laws that diminish or alienate public trust resources).

<sup>233</sup> See Rose, *The Comedy of the Commons*, *supra* note 150, at 721–23. Of course, there are other forms that a public trust canon could take; however, a clear statement requirement aligns with past judicial interpretations of the doctrine. See discussion *supra* Part IV.

<sup>234</sup> See Sax, *The Public Trust Doctrine*, *supra* note 20, at 531, 534.

<sup>235</sup> Sunstein, *supra* note 148, at 458.

As a canon, the doctrine would give appropriate weight to widely shared values, where doing so would be consistent with legislative text and purpose.

In short, a public trust doctrine canon of interpretation would serve to protect social and environmental values from infringement. Applied here, a public trust canon would confirm that the Antiquities Act and OCSLA section 12(a) confer a one-direction power to the President in the direction of preservation, consistent with the statutes' plain text, legislative history, and relevant legal opinions.

In the final Part, this Article describes how the public trust doctrine illuminates the wisdom of the structure established in OCSLA section 12(a) and the Antiquities Act.

#### VI. THE WISDOM OF ONE-WAY EXECUTIVE BRANCH LEVERS IN THE ANTIQUITIES ACT AND OCSLA SECTION 12(A)

Both the Antiquities Act and OCSLA section 12(a) provide one-way levers for the President to protect special places for the benefit of present and future generations. Congress did not give the President the power to undo or diminish these reservations of public land. The drafters of the Antiquities Act intended for the President to be able to act decisively to make conservation decisions through national monument designations.<sup>236</sup> And the drafters of OCSLA section 12(a) intended to confer a broad power to reserve resources of the Outer Continental Shelf, including for conservation purposes.<sup>237</sup> The legislative branch serves as a check on these executive branch powers by retaining the authority to revoke or modify national monument designations and offshore leasing withdrawals through legislative action.

Until now, no president has ever rescinded a permanent offshore leasing withdrawal made by a prior president pursuant to section 12(a) of OCSLA. And until now, no president has embarked upon a far-reaching review of national monuments designated by his predecessors and announced steep reductions in monument size, even in the face of overwhelming public support for maintaining monuments.<sup>238</sup>

The fact that such actions are unprecedented is unsurprising, because the President does not possess the power to rescind or diminish these protections. Congress retained these powers exclusively, pursuant to its plenary authority over public lands set forth in the Property Clause of the U.S. Constitution. This conclusion is bolstered by an examination of the plain text of the statutes, their legislative history, relevant attorney general opinions, as well as additional public land statutes passed before and after

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<sup>236</sup> S. REP. NO. 106-250, at 1 (2000); *see also supra* notes 133–135 and accompanying text.

<sup>237</sup> H.R. REP. NO. 83-1031, at 9 (1953); *see also supra* notes 121–125 and accompanying text.

<sup>238</sup> *See* discussion *supra* Parts II.B and III.C.

these Acts that show Congress was clear when it sought to delegate “multidirectional” powers to the executive branch.<sup>239</sup>

Moreover, understanding OCSLA section 12(a) and the Antiquities Act as one-way presidential levers to preserve is consistent with the public trust doctrine, which in some states imposes restrictions on alienation of public lands absent specific legislative approval.<sup>240</sup> The logic behind this principle is that legislatures answer to a broader constituency than municipal actors, and by virtue of their numerous rules of procedure and process, undertake a more deliberative, open process that helps to guard against rash or corrupt decisions with respect to public lands and natural resources.

By reserving to the legislative branch the power to reduce or abolish national monuments and offshore protected areas, the one-way levers of OCSLA and the Antiquities Act parallel this public trust doctrine jurisprudence. Congress, like state legislatures, is designed to operate through a sequential, democratic process that helps to guard against impulsive, misinformed, or unethical decisions with respect to public lands and resources. There is a significant risk to giving the President the power to rescind national monuments at will: the nation’s cultural, historical, and scenic legacy would rest upon the particular preferences or whims of one person, with their attendant biases and blind spots. Similarly, a concern about the biases of lone and local actors trumping the broader public interest animated and informed Professor Sax’s articulation of the public trust doctrine as best effectuated by state legislatures.<sup>241</sup> Crafting these provisions as one-way levers reflects considerable foresight in light of the recent, unprecedented actions of the Trump Administration that pits short-term local interests, such as fossil fuel production, against the broader long-term public interest in maintaining offshore protected areas and national monuments, as demonstrated through the millions of public comments opposed to shrinking any national monument boundaries.<sup>242</sup>

Congress is a deliberative body; protecting public lands through congressional action often entails multiple hearings with witnesses, several rounds of legislation drafting, and protracted negotiations. Such a deliberative process has benefits and may lead to worthwhile compromises,

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<sup>239</sup> See generally Squillace et al., *Presidents Lack Authority*, *supra* note 16 (using similar factors to demonstrate that “Congress intended to reserve for itself the power to revoke or modify national monument proclamations”).

<sup>240</sup> See discussion *infra* Part IV.C.

<sup>241</sup> For example, Sax described the controversy surrounding whether the Town of Emeryville could legally fill and develop parts of San Francisco Bay. Sax, *The Public Trust Doctrine*, *supra* note 20, at 532–34. This experience “suggest[ed] the need to adjust traditional decision-making mechanisms for [common] resources like the bay in light of the potential disjunction between the perceived benefit to the local entity and the total impact of such local choices on the community of users as a whole.” *Id.* at 534.

<sup>242</sup> See Exec. Order No. 13,792, 82 Fed. Reg. 20,429, 20,429 (May 1, 2017) (directing the Secretary of the Interior to review all monuments designated or expanded after January 1, 1996, for which the Secretary determines inadequate “public outreach and coordination with relevant stakeholders” occurred); Valerie Volcovici, *U.S. Interior Department Receives Over 2 Million Comments on Monument Review*, REUTERS, July 11, 2018, <https://perma.cc/PC3L-SV96>.

but it can also imperil the preservation of special places that require swift protection.<sup>243</sup> A president unrestrained by these processes can, by contrast, act quickly and decisively. Without such “bold executive actions,” many of the monuments, national parks, and marine reserves that we value today would not exist.<sup>244</sup>

But while speed and decisiveness in *protecting* public lands may be an asset, which helps explain why Congress delegated to the executive branch the authority to create monuments and offshore reserves in the first place, haste in *removing* such protections and opening these lands to development could threaten their very existence. Once protected status is removed, such federal lands typically default to their original management plans, which may allow for resource extraction, commercial fishing, and other uses previously found to imperil their security or longevity. Congress may not be able to act quickly enough to stop such executive branch actions to prevent the permanent degradation of former monuments and offshore reserves.

Therefore, the Antiquities Act and OCSLA section 12(a) are part of a lineage of public lands jurisprudence that requires the “monumental” decision of whether to rescind public land protections to be made by legislatures, or at least through explicitly delegated authority. This important context counters the argument made by Gaziano and Yoo that, “Almost every grant of power, by Constitution or statute, implicitly also includes the power of reversal.”<sup>245</sup> As Bruce Fein and W. Bruce DelValle have argued: “Exceptions to the Constitution’s entrustment of all legislative power to Congress should be narrowly construed to safeguard against executive tyranny.”<sup>246</sup> It would be unwise to read unrestrained executive branch power into statutes where none exists, especially where statutory purpose and intent is to preserve public objects and places for the benefit of present and future generations.

Gaziano and Yoo cite examples from different legal contexts to support their claim that “a discretionary government power usually includes the power to revoke it—unless the original grant expressly limits the power of revocation.”<sup>247</sup> But different rules apply in different legal contexts, and in the public lands context, every grant of power does not include the power of reversal. For instance, Gaziano and Yoo cite the example of agency rulemaking authority, which is generally understood to allow an agency to repeal regulations, consistent with statutory authority.<sup>248</sup> But this example is distinct from the present issue in at least two important ways: first, the

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<sup>243</sup> See John D. Leshy, *Shaping the Modern West: The Role of the Executive Branch*, 72 U. COLO. L. REV. 287, 304 (2001) (“Although the existence of an immediate threat is not a necessary precondition to protective action, where threats do exist, the executive is almost always able to act more quickly than the Congress.”).

<sup>244</sup> See *id.* at 301–02, 304 (describing the hurdles to protection through legislative action and stating that only a fraction of lands considered are ultimately protected).

<sup>245</sup> Gaziano & Yoo, *Magical Legal Thinking*, *supra* note 22.

<sup>246</sup> BRUCE FEIN & W. BRUCE DELVALLE, DISTORTING THE ANTIQUITIES ACT TO AGGRANDIZE EXECUTIVE POWER—NEW WINE IN OLD BOTTLES 4 (2017), <https://perma.cc/2SAU-XFGT>.

<sup>247</sup> YOO & GAZIANO, PRESIDENTIAL AUTHORITY, *supra* note 22, at 7.

<sup>248</sup> *Id.* at 7–8.

President is not an agency and is not subject to the APA and its procedural protocol that applies to agency actions issuing, repealing, and revising regulations, such as the “notice and comment” rulemaking process.<sup>249</sup> Here, by contrast, without such procedural constraints, a President could essentially delete national monuments by keystroke.<sup>250</sup>

Second, the agency rulemaking example and the others cited by Gaziano and Yoo are not congressionally delegated powers deriving from the Property Clause of the U.S. Constitution. For instance, they cite the power of higher courts to overrule lower courts’ judicial opinions, as well as executive branch powers deriving directly from the Constitution.<sup>251</sup> Each of these examples is distinct from the situation at hand; some of these examples deal with different branches of government or actors; others describe different sources of constitutional authority, like the Treaty Clause.<sup>252</sup> Here, by contrast, the Constitution gives Congress, not the President, the power to administer federal lands.<sup>253</sup> Congressional authority over public lands is “without limitations.”<sup>254</sup> The legislative branch delegated the power to designate national monuments and to withdraw offshore areas from leasing to the executive branch through specific laws, but it did not confer the ability to diminish or revoke those reservations. And as described in Part III, statutes passed contemporaneous to the Antiquities Act and OCSLA section 12(a) show that when Congress sought to delegate a multidirectional power with respect to public land protections, it did so explicitly.<sup>255</sup>

Finally, the particular context of protected federal lands is relevant to interpreting these provisions as one-way levers, as demonstrated by the longstanding public trust jurisprudence described in Part IV. As one more example of how public lands are distinct and have been treated as such for centuries, implied executive branch power to reserve and protect federal lands, but not to open such lands to development, existed for a century before Congress expressly revoked it in the Federal Land Policy and Management Act, passed in 1976.<sup>256</sup> In *United States v. Midwest Oil Co.*,<sup>257</sup> the Supreme Court explained the long history of executive branch “reservations” and congressional acquiescence to such reservations:

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<sup>249</sup> See *Franklin v. Massachusetts*, 505 U.S. 788, 796 (1992) (holding that the President is not an “agency” under the APA); see also APA, 5 U.S.C. §§ 551–559 (2012) (laying out extensive procedures for notice and comment rulemaking that apply to agencies).

<sup>250</sup> While the broad electorate would serve as one check on this authority, through the power to select another president later, for presidents in their final term, this check is less powerful.

<sup>251</sup> See YOO & GAZIANO, PRESIDENTIAL AUTHORITY, *supra* note 22, at 7–8.

<sup>252</sup> See U.S. CONST. art. II, § 2, cl. 2 (“He shall have Power, by and with the Advice and Consent of the Senate, to make Treaties, provided two thirds of the Senators present concur . . .”).

<sup>253</sup> See *id.*, art. IV, § 3, cl. 2.

<sup>254</sup> See *Alabama*, 347 U.S. 272, 273 (1954).

<sup>255</sup> See discussion *supra* Parts III.B–C.

<sup>256</sup> See Getches, *supra* note 211, at 313.

<sup>257</sup> 236 U.S. 459 (1915).

The Executive . . . withdrew large areas in the public interest. These orders were known to Congress, as principal, and in not a single instance was the act of the agent disapproved. Its acquiescence all the more readily operated as an implied grant of power in view of the fact that its exercise was not only useful to the public but did not interfere with any vested right of the citizen.<sup>258</sup>

The Court noted that “the withdrawal orders prevented the acquisition of any private interest in such land.”<sup>259</sup> Thus, implied executive branch authority to reserve public lands served to *prevent* private interests from controlling and exploiting public land. This implied authority to withdraw and protect public lands existed for so long, until expressly repealed by the Federal Land Policy and Management Act, because it fit neatly in line with the stewardship goals of the federal government and did not intrude upon the legislative branch’s ultimate prerogative over public lands.<sup>260</sup> As Getches explained: “To allow [private] uses without some delegation of authority from Congress arguably usurps the authority of the legislative branch under the Property Clause. To deny private uses, on the other hand, preserves congressional prerogatives and flexibility.”<sup>261</sup>

In short, the public trust doctrine illuminates the wisdom of the structure established in OCSLA section 12(a) and the Antiquities Act, and shows that it is not novel. The doctrine provides important context for a history of public lands jurisprudence in which courts demand greater justification for actions allowing development on public lands than for protecting the same lands. Indeed, the doctrine can be applied as a canon of interpretation that requires a “clear statement” by Congress before interpreting a statute to allow actions that could otherwise impair public lands and resources.

## VII. CONCLUSION

President Trump has already taken actions with respect to public lands that this Article argues no president has the authority to take. These actions include reversing presidential withdrawals of Outer Continental Shelf areas from oil and gas leasing and embarking on a far-reaching “review” of existing national monuments, culminating in sharp boundary reductions.<sup>262</sup> Moreover, the Trump Administration may attempt to take additional actions, likewise without legislative authority, that threaten the preservation of our nation’s protected lands.

Ultimately, the legality of these executive branch actions will be decided by the federal courts. In examining the extent of presidential power over protected public lands as set forth in the Antiquities Act and OCSLA section 12(a), courts should look first to the statutory text and constitutional

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<sup>258</sup> *Id.* at 475.

<sup>259</sup> *Id.* at 479.

<sup>260</sup> *See Getches, supra* note 211, at 287–88.

<sup>261</sup> *Id.* at 287.

<sup>262</sup> *See* discussion *supra* Part II.

framework, but also at the broader context of public land management, including the public trust doctrine.

The powers conferred to the President in the Antiquities Act and section 12(a) of OCSLA operate in one direction only: towards preservation. Presidents do not have the authority to rescind national monument designations or to restore previously withdrawn areas to offshore leasing; Congress retains this authority through its plenary power over public lands as articulated in the Property Clause.

The Antiquities Act and OCSLA section 12(a) reflect the wisdom of their drafters in conferring a one-way executive branch power to preserve federal lands. While allowing relatively unencumbered presidential actions to protect special places and natural resources, they reserve to Congress the more “monumental” power to modify or abolish national monuments and to return withdrawn offshore lands to disposition by fossil fuel leasing. This interpretation is consistent not only with statutory text, the relevant constitutional framework, and legislative history, but also with the enduring national narrative that public lands should be regulated according to principles of democratic decision making, especially where important public trust interests are at stake.

# CLE READING MATERIALS

## Order on Remand Reinstating Certificate and Abandonment Authorization

FOR

2:40 p.m. – 4:00 p.m.

**EMERGING ISSUES IN NATURAL RESOURCES POLICY**

- **Nada Culver**, Senior Counsel and Director, The Wilderness Society's BLM Action Center
- **David J. Hayes**, Executive Director, State Energy and Environmental Impact Center at NYU Law; former Deputy Secretary of the Interior
- **Brenda Mallory**, Executive Director and Senior Counsel, Conservation Litigation Project; former General Counsel for the White House Council on Environmental Quality
- Moderator: **Jayni Hein**, Policy Director, Institute for Policy Integrity

**PLEASE RETURN TO REGISTRATION TABLE**

162 FERC ¶ 61,233  
UNITED STATES OF AMERICA  
FEDERAL ENERGY REGULATORY COMMISSION

Before Commissioners: Kevin J. McIntyre, Chairman;  
Cheryl A. LaFleur, Neil Chatterjee,  
Robert F. Powelson, and Richard Glick.

Florida Southeast Connection, LLC	Docket Nos. CP14-554-002
Transcontinental Gas Pipe Line Company, LLC	CP15-16-003
Sabal Trail Transmission, LLC	CP15-17-002

ORDER ON REMAND REINSTATING CERTIFICATE AND ABANDONMENT  
AUTHORIZATION

(Issued March 14, 2018)

1. This case is before the Commission on remand from the United States Court of Appeals for the District of Columbia Circuit.<sup>1</sup> At issue is the Commission's consideration of downstream greenhouse gas (GHG) emissions from gas transported by the three pipelines that make up the Southeast Market Pipelines Project (SMP Project). The court vacated and remanded the Commission's orders in *Florida Southeast Connection, LLC* authorizing construction and operation of the SMP Project<sup>2</sup> and directed the Commission to revise the SMP Project's environmental impact statement (EIS) to provide a quantitative estimate of the project's downstream greenhouse emissions or to explain more specifically why the Commission cannot do so.<sup>3</sup> Further, the court directed the Commission to explain whether the Commission continues to regard the Social Cost of Carbon tool as not useful for NEPA purposes.<sup>4</sup>

2. The Commission issued a draft Supplemental EIS (SEIS) on September 27, 2017, and a final SEIS on February 5, 2018. Commission staff concluded that notwithstanding the additional analysis in the SEIS, it could not reach a finding whether downstream GHG emissions are significant and that the additional analysis does not alter staff's conclusion in the prior final environmental impact statement that the SMP Project is an

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<sup>1</sup> *Sierra Club v. FERC*, 867 F.3d 1357 (D.C. Cir. 2017) (*Sierra Club*).

<sup>2</sup> *Florida Southeast Connection, LLC*, 154 FERC ¶ 61,080, order on reh'g, 156 FERC ¶ 61,160 (2016).

<sup>3</sup> *Sierra Club*, 867 F.3d at 1375.

<sup>4</sup> *Id.*

environmentally acceptable action. As discussed below, we affirm these conclusions. Accordingly, we reinstate the certificate and abandonment authority for the SMP Project as issued in our earlier orders.

## **I. Background**

### **A. Environmental Review and Certificate Order**

3. From north to south, the three projects that make up the SMP Project are the Hillabee Expansion Project (proposed by Transcontinental Gas Pipe Line Company, LLC, in Docket No. CP15-16-000), the Sabal Trail Project (proposed by Sabal Trail Transmission, LLC, in Docket No. CP15-17-000), and the Florida Southeast Connection Project (proposed by Florida Southeast Connection, LLC, in Docket No. CP14-554-000). Together, the projects will transport approximately 1.1 billion cubic feet (Bcf) of natural gas per day over 685.5 miles of Commission-jurisdictional pipelines from Alabama through Georgia to customers in Florida and the Southeast region. Currently, four power plants have been identified as end-use consumers of the SMP Project volumes: the new Okeechobee Clean Energy Center (owned by Florida Power and Light Company (FPL)), the new Citrus County Combined Cycle Plant (owned by Duke Energy Florida, LLC), and the existing Martin County Power Plant and Riviera Beach Clean Energy Center (both owned by FPL).<sup>5</sup> The shippers, FPL and Duke Energy Florida, LLC, have subscribed to 93.1 percent of the firm transportation service on the SMP Project-created capacity to benefit their power plants.<sup>6</sup>

4. In 2014, the project proponents filed separate applications to construct and operate the three pipeline projects. Commission staff chose to evaluate these applications together as connected actions. On September 4, 2015, Commission staff issued a draft environmental impact statement (DEIS) for the combined SMP Project, in compliance

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<sup>5</sup> That SMP Project-transported natural gas would be used at the Okeechobee Clean Energy Center and Riviera Beach Clean Energy Centers was disclosed in filings made after the SMP Project applications. Specifically, Florida Southeast Connection, LLC, applied to the Commission on June 15, 2017, to construct the Okeechobee Lateral (Docket No. CP17-463-000) to serve the Okeechobee Clean Energy Center. The parent company of FPL, NextEra Energy, Inc., indicated in comments on the draft SEIS that the Riviera Beach Clean Energy Center receives gas from the SMP Project. NextEra Energy, Inc., November 20, 2017 Comments on the Draft SEIS at 4.

<sup>6</sup> *Florida Southeast Connection, LLC*, 145 FERC ¶ 61,080 at PP 23-25. Of the 1,075,000 dekatherms per day of firm transportation service to be available on the SMP Project-created capacity, FPL has subscribed to 600,000 dekatherms per day and Duke Energy Florida has subscribed to 400,000 dekatherms per day.

with the National Environmental Policy Act of 1969 (NEPA).<sup>7</sup> Sierra Club<sup>8</sup> filed comments on the DEIS, arguing that the DEIS failed to analyze downstream GHG emissions and therefore did not support the conclusion that there would be no significant cumulative impact from them.

5. On December 18, 2015, Commission staff issued the final environmental impact statement (FEIS).<sup>9</sup> The FEIS quantified the SMP Project's direct construction- and operation-related GHG emissions, but stated that it would be difficult to meaningfully consider downstream end-use effects.<sup>10</sup> Though the FEIS acknowledged that the SMP Project would result in the distribution and consumption of about 1 billion dekatherms per day of natural gas, the FEIS stated that there is no standard methodology to determine how the proposed SMP Project's incremental contribution to GHGs would translate into physical effects of the global environment.<sup>11</sup> The FEIS explained that some of the downstream natural gas power plants to be served would displace coal-fired plants, which have higher total lifecycle GHG emissions.<sup>12</sup> The FEIS also explained that all natural gas-fired power plants would be regulated by federal and state air permitting agencies and would be subject to their regulatory requirements.<sup>13</sup>

6. On February 2, 2016, the Commission granted the necessary authorizations for the project.<sup>14</sup> The Commission found that the applicants had demonstrated a need for the SMP Project and that the SMP Project's benefits would outweigh any adverse economic effects on other pipelines and their captive customers and on landowners and surrounding

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<sup>7</sup> Notice of the DEIS was published in the *Federal Register* on September 11, 2015. 80 Fed. Reg. 54,777.

<sup>8</sup> The Commission's previous orders for the SMP Project referred to Sierra Club as "Kiokee Flint."

<sup>9</sup> Notice of the final EIS was published in the *Federal Register* on December 24, 2015. 80 Fed. Reg. 80,354.

<sup>10</sup> FEIS at 3-297 to 3-298.

<sup>11</sup> *Id.* at 3-297.

<sup>12</sup> *Id.* at 3-297 to 3-298.

<sup>13</sup> *Id.* at 3-297-98

<sup>14</sup> *Florida Southeast Connection, LLC*, 154 FERC ¶ 61,080 (2016) (Certificate Order).

communities.<sup>15</sup> The Commission also found that the project, as conditioned by the order, would be environmentally acceptable.<sup>16</sup> Consequently, consistent with the criteria discussed in the Commission's Certificate Policy Statement,<sup>17</sup> the Commission found that the public convenience and necessity requires approval of the SMP Project, as conditioned in the order.<sup>18</sup>

## **B. Rehearing Order**

7. Sierra Club requested rehearing, arguing, among other things, that the Commission erred in failing to estimate the downstream GHG emissions from the gas that will be transported by the project and in failing to consider the effects that those emissions will have on climate change. Although the Commission was considering Sierra Club's rehearing request, the Commission authorized the construction of the projects, in August and early September 2016.<sup>19</sup>

8. On September 7, 2016, the Commission denied rehearing, finding that the FEIS sufficiently assessed GHG emissions.<sup>20</sup> The Commission explained that the environmental effects of end-use emissions resulting from natural gas consumption are generally neither caused by a proposed pipeline project nor are they reasonably foreseeable consequences of the Commission's approval of an infrastructure project, as contemplated by CEQ regulations.<sup>21</sup> Further, the Commission explained that, even if

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<sup>15</sup> *Id.* P 88.

<sup>16</sup> *Id.* P 292.

<sup>17</sup> *Certification of New Interstate Natural Gas Pipeline Facilities*, 88 FERC ¶ 61,227 (1999), *clarified*, 90 FERC ¶ 61,128, *further clarified*, 92 FERC ¶ 61,094 (2000) (Certificate Policy Statement).

<sup>18</sup> Certificate Order, 154 FERC ¶ 61,080 at P 88.

<sup>19</sup> The filing of a request for rehearing does not stay a Commission order. *See* 15 U.S.C. § 717r (2012) (“The filing of an application for rehearing . . . shall not, unless specifically ordered by the Commission, operate as a stay of the Commission’s order.”).

<sup>20</sup> *Florida Southeast Connection, LLC*, 156 FERC ¶ 61,160 (2016) (Rehearing Order).

<sup>21</sup> *Id.* P 63.

there were a causal relationship between the proposed project and end use emissions, there was insufficient information to meaningfully evaluate downstream GHG impacts.<sup>22</sup>

9. In September 2016, Sierra Club, among other parties, appealed the Commission's decision to the U.S. Court of Appeals for the District of Columbia Circuit. In June and July 2017, while the court case was pending, Commission staff authorized the pipelines to commence service on completed facilities.

### C. The Court's Remand Order

10. On August 22, 2017, the U.S. Court of Appeals for the D.C. Circuit vacated and remanded the Certificate and Rehearing Orders.<sup>23</sup> The court held that where "all the natural gas that will travel through these pipelines will be going somewhere: specifically, to power plants in Florida,"<sup>24</sup> the downstream greenhouse gas emissions that will result from burning the transported gas "are an indirect effect of authorizing [the SMP] project, which FERC could reasonably foresee, and which [FERC] has legal authority to mitigate."<sup>25</sup> As such, the court held that the Commission's environmental review must consider these effects.<sup>26</sup>

11. The court directed the Commission to quantify and consider the project's downstream GHG emissions or explain in more detail why it cannot do so.<sup>27</sup> In addition, the court required the Commission to explain whether it still adhered to its prior position, accepted by the court in *EarthReports, Inc. v. FERC*,<sup>28</sup> that estimates using the Social Cost of Carbon tool were not useful in performing its NEPA review.<sup>29</sup>

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<sup>22</sup> *Id.* PP 63, 69.

<sup>23</sup> *Sierra Club*, 867 F.3d 1357.

<sup>24</sup> *Id.* at 1371.

<sup>25</sup> *Id.* at 1374.

<sup>26</sup> *Id.*

<sup>27</sup> *Id.* at 1375.

<sup>28</sup> 828 F.3d 949, 956 (D.C. Cir. 2016) (*Earth Reports*).

<sup>29</sup> *Sierra Club*, 867 F.3d at 1375.

**D. Supplemental Environmental Impact Statement**

12. On September 27, 2017, the Commission issued a draft SEIS to supplement the information and analyses contained in the December 2015 FEIS for the SMP Project. Notice of the draft SEIS was published in the *Federal Register* on October 4, 2017, for a 45-day comment period.<sup>30</sup>

13. In response, we received comments from Senators Michael F. Bennet and Sheldon Whitehouse; Duke Energy Florida, LLC; the Institute for Policy Integrity at New York University School of Law (Institute for Policy Integrity); NextEra Energy, Inc.; Palm Beach County Environmental Alliance; a group of seven Riverkeeper organizations and the WWALS Watershed Coalition; Sabal Trail Transmission, LLC; the Sabin Center for Climate Change Law at Columbia Law School (Sabin Center); Sierra Club; the U.S. Environmental Protection Agency (EPA); the Teamsters National Pipeline Training Fund; a group filing by Institute for Policy Integrity, Natural Resources Defense Council, Sierra Club, and the Union of Concerned Scientists (Conservation Groups); and several individuals.

14. On February 5, 2018, the Commission issued the final SEIS. Notice of the final SEIS was published in the *Federal Register* on February 14, 2018.<sup>31</sup> All comments are addressed in the final SEIS or in this order, as appropriate. References in this order to the SEIS are to the final SEIS, unless otherwise noted.

15. Although the SEIS quantified the maximum GHG emissions from downstream use of natural gas transported on the SMP Project, Commission staff had no basis for determining the significance of impacts from these emissions. Based on the environmental analysis in the FEIS and the final SEIS, staff concluded that, with respect to the impacts for which staff could assess significance, constructing and operating the SMP Project would result in temporary and permanent impacts on the environment. The SEIS found, however, that these effects would not be significant with the applicants' implementation of their respective impact avoidance, minimization, and mitigation measures, as well as their adherence to the measures list in the FEIS to further avoid, minimize, and mitigate these impacts.<sup>32</sup>

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<sup>30</sup> 82 Fed. Reg. 46,233.

<sup>31</sup> 83 Fed. Reg. 6172.

<sup>32</sup> SEIS at 9-10.

## II. Discussion

### A. Comments Outside the Scope of this Order

16. Commenters raised many issues that are outside the scope of the SEIS and the court's mandate, including: GHG emissions from upstream production of natural gas; project impacts to wetlands, threatened and endangered species, groundwater, and real property; noise; safety of pipelines constructed in karst areas; environmental justice; project need; LNG exports; landowner notification; project's effect on the supply and demand for natural gas and substitute energy sources; and public participation. The Commission will not address these arguments because the Commission already thoroughly considered them in the Certificate and Rehearing Orders and the court either specifically affirmed these arguments or did not remand them to the Commission for further consideration. We address the relevant comments below.

### B. Commission Responsibilities Under the NGA and NEPA

17. Before we turn to discussion of the specific issues before us on remand, it may be helpful to take a broader look at the Commission's role in approving the construction and operation of natural gas pipelines. "[T]he public interest that the Commission must protect always includes the interest of consumers in having access to an adequate supply of gas at a reasonable price."<sup>33</sup> In the past, when interstate pipelines were natural gas merchants delivering the commodity to the customer's city gate at a bundled rate, fulfilling the Commission's public interest mandate included both ensuring there was a match between a pipeline's access to supplies at the upstream end and the customer's anticipated demand at the downstream end sufficient to assure the pipeline could meet that demand for the long term and also setting a reasonable rate for the bundled service. It was also the case during that period that natural gas was viewed as a limited resource and both Congress and the Commission imposed restrictions on end uses to ensure that the highest-valued needs could continue to be met. Today, however, natural gas is plentiful as a result of both action by Congress to decontrol the pricing of natural gas and technological advances. Further, the interstate pipeline industry has been restructured to

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<sup>33</sup> *Tejas Power Corp. v. FERC*, 908 F.2d 998, 1003 (D.C. Cir. 1990). *See also*, *FPC v. Hope Natural Gas Co.*, 320 U.S. 591, 611 (1944) ("[T]he Commission was told by section 7(c) [of the NGA], as originally enacted, that it was 'the intention of Congress that natural gas shall be sold in interstate commerce for resale for ultimate public consumption for domestic, commercial, industrial, or any other use at the lowest possible reasonable rate consistent with the maintenance of adequate service in the public interest.'"); *Atl. Ref. Co. v. Pub. Serv. Comm'n of State of N.Y.*, 360 U.S. 378, 388 (1959) (quoting same, also noting that the 1942 amendments to the NGA, which broadened section 7(c), were not intended to change this declaration of purpose).

one where pipeline companies are solely transporters of natural gas—pipeline customers, both suppliers and consumers, make their commodity arrangements independent of the pipeline companies. This change was designed “to ensure that all shippers have meaningful access to the pipeline transportation grid so that willing buyers and sellers can meet in the competitive national market to transact the most efficient deals possible.”<sup>34</sup>

18. The Commission has not historically engaged in planning the development of natural gas capacity.<sup>35</sup> Today, likely influenced by the Commission’s current policy prohibiting the subsidization of new construction by a pipeline’s existing customers,<sup>36</sup> transportation projects are developed almost exclusively to satisfy the needs of identified shipper-customers, who might be producers, marketers, local distribution companies, or large end-use consumers like industrial customers and electricity generators.<sup>37</sup>

19. Under section 7 of the NGA, the Commission must determine whether a proposed project is or will be required by the present or future public convenience and necessity.”<sup>38</sup> The inquiry under section 7 of the NGA encompasses “all factors bearing on the public interest.”<sup>39</sup>

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<sup>34</sup> *Pipeline Service Obligations and Revisions to Regulations Governing Self-Implementing Transportation; and Regulation of Natural Gas Pipelines After Partial Wellhead Decontrol*, Order No. 636, FERC Stats. & Regs. ¶ 30,939 at 30,393.

<sup>35</sup> The Commission authority to compel construction of facilities is extremely limited. *See* section 7(a) of the NGA, 15 U.S.C. § 717f(a) (2012).

<sup>36</sup> Certificate Policy Statement, 88 FERC at 61,746-47.

<sup>37</sup> Applications are also filed for authority to construct and operate facilities to enhance or maintain service to existing customers (*e.g.*, to replace obsolete or deteriorating facilities).

<sup>38</sup> 15 U.S.C. § 717f(e) (2012). The Commission interpreted “public convenience and necessity” in *In the Matter of Kansas Pipe Line & Gas Co. & N. Dakota Consumers Gas Co.*, 2 FPC 29, 56 (1939) (“we view the term as meaning a public need or benefit without which the public is inconvenienced to the extent of being handicapped in the pursuit of business or comfort or both—without which the public generally in the area involved is denied to its detriment that which is enjoyed by the public of other areas similarly situated.”).

<sup>39</sup> *Atlantic Refining Co. v. Pub. Serv. Comm’n of N.Y.*, 360 U.S. 378, 391 (1959).

20. The Commission’s consideration of a proposed project’s environmental effects is informed by the staff’s environmental analysis in the NEPA document (environmental assessment (EA) or EIS). As the court explained in *Sierra Club*, under NEPA an EIS has two purposes: “it forces the agency to take a hard look at the environmental consequences of its actions, including alternatives to its proposed course” and “it ensures that these environmental consequences, and the agency’s consideration of them, are disclosed to the public.”<sup>40</sup> An EIS is deficient if it does not contain “sufficient discussion of the relevant issues and opposing viewpoints” or if it does not demonstrate “reasoned decisionmaking.”<sup>41</sup> An EIS must include, among other content, a discussion of the indirect effects (and their significance) arising from the proposed action and from reasonable alternatives.<sup>42</sup> The agencies must ensure the professional integrity, including scientific integrity, of the discussions and analyses in an EIS and must disclose methodologies used.<sup>43</sup> The adequacy of an EIS is determined by a rule of reason, “whether an EIS’s deficiencies are significant enough to undermine informed public comment and informed decisionmaking.”<sup>44</sup>

21. Section 7 of the NGA authorizes the Commission to impose “such reasonable terms and conditions as the public convenience and necessity may require.”<sup>45</sup> We can and do evaluate a proposed project’s direct, indirect, and cumulative impacts as factors bearing on the public interest, and we impose environmental conditions to mitigate a project’s environmental impacts.

### C. GHG Emissions

22. The SEIS examines a worst-case GHG emissions scenario in which the SMP Project would deliver 100 percent of the natural gas it will be capable of transporting and all of delivered gas would be burned. When fully constructed, the SMP Project will have

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<sup>40</sup> *Sierra Club*, 867 F.3d at 1367 (internal quotation and citations omitted).

<sup>41</sup> *Id.* at 1368 (internal quotation and citations omitted).

<sup>42</sup> 40 C.F.R. § 1502.16(b), (d) (2017) (Environmental consequences); *id.* § 1502.14 (Alternatives including the proposed action).

<sup>43</sup> *Id.* § 1502.24 (2017) (Methodology and scientific accuracy).

<sup>44</sup> *Id.* (internal citations omitted).

<sup>45</sup> 15 U.S.C. § 717f(e) (2012).

the potential to increase the flow of natural gas into Florida by 1.1 Bcf per day.<sup>46</sup> The project proponents have identified four power plants as end-use consumers of natural gas transported on the SMP Project; three of these power plants will have new or modified operations.<sup>47</sup> Using publicly available information about these power plants, the SEIS estimates that the SMP Project will indirectly result in annual gross downstream GHG emissions of 14.5 million metric tons (in carbon dioxide-equivalent units (CO<sub>2</sub>e)<sup>48</sup>) and annual net downstream GHG emissions of 8.36 million metric tons CO<sub>2</sub>e.<sup>49</sup>

23. The gross figure includes the potential-to-emit volumes of GHG emissions from each power plant, as stated in air quality permits before the Florida Department of Environmental Protection.<sup>50</sup> Potential-to-emit volumes are the maximum amount a permitted power plant is allowed to emit, typically representing operations at full capacity around the clock.<sup>51</sup> The gross figure also includes the assumed combustion of approximately 100 million cubic feet per day of natural gas carried on an unsubscribed portion of the SMP Project capacity.<sup>52</sup> The net figure reduces the gross figure to reflect the reductions in GHG emissions that will occur as the identified power plants replace coal-fired units and displace oil as an alternate fuel, as described in the specific air quality

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<sup>46</sup> SEIS at 3.

<sup>47</sup> *Id.* at 3-4. The Riviera Beach Clean Energy Center's potential-to-emit emissions would not change due to the SMP Project, because the project will only serve to provide the existing natural gas-fired plant with access to alternative sources of natural gas. Thus, the SEIS does not include emissions from combustion of gas delivered to this facility in the downstream GHG emissions calculations. *Id.* at 4.

<sup>48</sup> The potential of a greenhouse gas to increase heating in the atmosphere, i.e., its global warming potential (GWP), is typically expressed as a multiple of the heating potential of CO<sub>2</sub> over a specific timeframe. For example, the 100-year GWP of CO<sub>2</sub> is benchmarked at 1, whereas the 100-year GWP of methane (CH<sub>4</sub>) is 25 and of nitrous oxide (N<sub>2</sub>O) is 298. SEIS at 4 n.8.

<sup>49</sup> SEIS at 5 tbl.1.

<sup>50</sup> *Id.* at 4. The Commission's Office of Energy Projects filed a memorandum to record on October 18, 2017, to make these air permits easier to access.

<sup>51</sup> *Id.* at 4 n.7.

<sup>52</sup> *Id.* at 4.

permits before the Florida Department of Environmental Protection.<sup>53</sup> The net figure uses the best available information, but the offset cannot be determined with accuracy.<sup>54</sup>

24. Setting aside information about the identified end-use consumers in this proceeding, the SEIS also estimates annual full burn downstream GHG emissions of 23.0 million metric tons CO<sub>2e</sub>.<sup>55</sup> The full burn figure very conservatively assumes that the SMP Project will transport natural gas at its full capacity around the clock for combustion without displacing any other fuel source.<sup>56</sup> This scenario is also an overestimate, because pipelines only operate at full capacity during limited periods of full demand, but it provides an upper bound of potential downstream GHG emissions.

25. As detailed further below, the conclusions in the SEIS do not rely on any particular emission scenario. The SEIS provides the three scenarios to inform the Commission and the public.<sup>57</sup>

#### **D. Context and Significance**

26. To provide context to the downstream GHG estimate as suggested by the court, the SEIS compares the estimated downstream GHG emissions to the GHG emission inventories for Florida and the United States in 2015. The net figure equals a 3.6 percent increase compared to the 2015 Florida inventory and a 0.15 percent increase compared to the 2015 United States inventory. The full burn figure equals a 9.9 percent increase of the Florida inventory and 0.42 percent increase of the United States inventory.<sup>58</sup> The SEIS notes that Commission staff did not find any widely-accepted thresholds for GHG

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<sup>53</sup> SEIS at 4-5; *id.* App.

<sup>54</sup> *Id.*, App. at 63 (response to comment NGO6-2).

<sup>55</sup> *Id.* at 5-6, 6 tbl.2.

<sup>56</sup> *Id.* at 6; *id.* App. at 14 (response to comment NGO2-4).

<sup>57</sup> Several commenters expressed concern that the draft SEIS did not account for fugitive methane leaks. The final SEIS explains that for the gross and net scenarios, the data from the Florida air quality permits already includes fugitive methane emissions. SEIS at 6. The full burn scenario assumes a conservative (high) 0.26 percent fugitive methane leakage rate from power plants based on a recent study. *Id.*

<sup>58</sup> SEIS at 6 tbl.

significance or state emissions reduction targets for Florida,<sup>59</sup> so it was not possible to relate the SMP Project's impact to such a target. The national emissions reduction targets expressed in the EPA's Clean Power Plan and the Paris climate accord are pending repeal and withdrawal, respectively. Accordingly, we find there are no appropriate national targets to use as benchmarks for comparison.

27. We agree with the conclusion in the SEIS that there is no widely accepted standard to ascribe significance to a given rate or volume of GHG emissions.<sup>60</sup> We are aware of no standard established by international or federal policy, or by a recognized scientific body. Further, we continue to hold the position that "there are no established criteria identifying the monetized values that are to be considered significant for NEPA reviews," including as discussed in section II.E below, for the Social Cost of Carbon tool, which we continue to find "is not appropriate for estimating a specific project's impacts or informing our analysis under NEPA."<sup>61</sup>

28. Sierra Club and other commenters posited that the significance of downstream GHG emissions is "indisputable," for example because the downstream GHG emissions amount to a 9.9 percent increase over the Florida GHG emissions inventory for 2015. However, the fact that one may view a number as large does not necessarily equate to its being significant, and as the SEIS stated, there are no benchmarks to appropriately consider such environmental issues. Looking to local or state GHG emissions inventories as a benchmark for significance for purposes of siting natural gas pipelines is problematic. Any two projects with the same capacity (or multiple smaller projects with an equivalent cumulative capacity), but which are designed to serve end users in different states or multiple states, will contribute identically to global climate change notwithstanding that they might result in widely different percent increases over different states' GHG emissions inventories.<sup>62</sup> Moreover, as noted below, considering GHG emissions would have no effect on our alternatives analysis.

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<sup>59</sup> *Id.* at 7.

<sup>60</sup> *Id.* at 7.

<sup>61</sup> *Id.* at 7-8.

<sup>62</sup> For example, adding the same amount of GHG emissions could result in a relatively small percentage increase in an industrial area, while causing a more substantial increase in a less developed region. Yet, given that emissions are controlled by air quality standards, in neither case would there be a significant impact on the local community.

29. In addition, the vast majority of the lifecycle GHG emissions associated with the natural gas delivery chain are a result of the end use of the natural gas, not the construction or operation of the transportation facilities subject to the Commission's jurisdiction. Thus, the downstream GHG emissions associated with a proposed project are primarily a function of a proposed project's incremental transportation capacity, not the facilities, and will not vary regardless of the project's routing or location. There are no conditions the Commission can impose on the construction of jurisdictional facilities that will affect the end-use-related GHG emissions.<sup>63</sup> The only way for the Commission to reflect consideration of the downstream emissions in its decision making would be, as the court observed, to deny the certificate. However, were we to deny a pipeline certificate on the basis of impacts stemming from the end use of the gas transported, that decision would rest on a finding not "that the *pipeline* would be too harmful to the environment,"<sup>64</sup> but rather that the *end use* of the gas would be too harmful to the environment. The Commission believes that it is for Congress or the Executive Branch to decide national policy on the use of natural gas and that the Commission's job is to review applications before it on a case-by-case basis.<sup>65</sup>

#### **E. Social Cost of Carbon**

30. The Social Cost of Carbon tool, (as well as the Social Cost of Methane and Nitrous Oxide tools), estimates the monetized climate change damage associated with an incremental increase in CO<sub>2</sub> emissions in a given year. It can also be thought of as the cost today of future climate change damage, represented as a series of annual costs per metric ton of emissions discounted to a present-day value.

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<sup>63</sup> Contrast this with the direct project-related impacts, which the Commission has the ability to mitigate through conditions on routing (*e.g.*, changes to avoid sensitive resources), construction methodology (*e.g.*, timing restrictions to lessen impacts on wildlife, requirements to drill under sensitive streams rather than open cut), and operations (*e.g.*, noise restrictions, requiring electric instead of gas compressors in appropriate situations).

<sup>64</sup> *Sierra Club*, 867 F.3d at 1357 (emphasis added).

<sup>65</sup> See *Office of Consumers' Counsel v. FERC*, 655 F.2d 1132, 1147 (D.C. Cir. 1980) ("FERC's authority to consider all factors bearing on the public interest when issuing certificates means authority to look into those factors which reasonably relate to the purpose for which FERC was given certification authority."); *American Gas Association v. FERC*, 912 F.2d 1496, 1510-11 (D.C. Cir. 1990) ("[T]he Commission may not use its [Natural Gas Act] § 7 condition power to do indirectly . . . things that it cannot do at all.").

31. The court did not conclude that the Commission was required to use the Social Cost of Carbon. Rather, because the Commission did not address the Social Cost of Carbon tool in the FEIS for the SMP Project, the court directed the Commission to explain on remand whether, and why, the Commission holds to the position it took in a past EIS reviewed (and affirmed) by the court in *EarthReports*,<sup>66</sup> that the Social Cost of Carbon tool was not useful for the Commission's NEPA evaluation because several of the components of its methodology are contested and because not every harm it accounts for is necessarily significant within the meaning of NEPA.<sup>67</sup>

32. Both the FEIS and the SEIS acknowledge that fossil fuel GHG emissions are the primary driver of global climate change.<sup>68</sup> Further, the cumulative impacts analysis in the FEIS qualitatively described the potential cumulative impacts of climate change in the SMP Project region, such as increased pathogens and invasive species; decreased agricultural productivity; rising, more acidic oceans; and more destructive weather systems.<sup>69</sup>

33. However, several commenters claim that if a NEPA review only quantifies the proposed action's GHG emissions or only qualitatively discusses the general effects of global climate change, then decision-makers and the public will tend to overly discount that individual action's potential contribution to climate change.<sup>70</sup> Instead, commenters contend that the Commission should use the Social Cost of Carbon tool to demonstrate the relative significance of the volume of downstream GHG emissions and to approximate the resulting physical climate change impacts.<sup>71</sup>

34. Commenters present the Social Cost of Carbon values as the best available science and economics for contextualizing the climate change impacts from GHG emissions. They suggest that the Commission should use the Social Cost of Carbon tool,

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<sup>66</sup> *EarthReports*, 828 F.3d at 956.

<sup>67</sup> *Sierra Club*, 867 F.3d. at 1375.

<sup>68</sup> FEIS at 3-296; SEIS at 6.

<sup>69</sup> *Id.* at 3-296.

<sup>70</sup> *See, e.g., id.* at 13.

<sup>71</sup> Several organizations specifically addressed the Social Cost of Carbon tool in their comment letters, including the Conservation Groups, Institute for Policy Integrity, Sabin Center; Sierra Club, and a number of individual comment letters that echoed the main points made by the environmental and academic entities.

and explicitly the Social Cost of Methane tool for potential fugitive emissions,<sup>72</sup> as part of a cost-benefit analysis. They contend that this analysis should include emissions associated with the proposed pipeline as well as the sum of upstream and downstream emissions associated with the transported gas. Further, as discussed below, based on potential climate change impacts from downstream GHG emissions, Sierra Club and individual commenters urge that the Commission adopt the No Action Alternative.

35. The SEIS declined to use the Social Cost of Carbon tool, reiterating the Commission's explanation from *EarthReports* (and other proceedings) why the Social Cost of Carbon tool is not appropriate in project-level environmental review under NEPA:

(1) the U.S. Environmental Protection Agency (EPA) states that “no consensus exists on the appropriate [discount] rate to use for analyses spanning multiple generations” and consequently, significant variation in output can result; (2) the tool does not measure the actual incremental impacts of a project on the environment; and (3) there are no established criteria identifying the monetized values that are to be considered significant for NEPA reviews. The SCC tool may be useful for rulemakings or comparing regulatory alternatives using cost-benefit analyses where the same discount rate is consistently applied; however, it is not appropriate for estimating a specific project's impacts or informing our analysis under NEPA.<sup>73</sup>

The SEIS then states that the comments raised about Social Cost of Carbon are matters of policy more appropriate for consideration in the Commission order.<sup>74</sup>

36. We now take this opportunity to explain more fully why the Social Cost of Carbon tool cannot meaningfully inform the Commission's decisions on natural gas

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<sup>72</sup> The Conservation Groups and the Sabin Center contend that the Commission should use the Social Cost of Carbon tool in combination with the Social Cost of Methane and Social Cost of Nitrous Oxide tools. Conservation Groups November 20, 2017 Comments at 2; Sabin Center November 17, 2017 Comments at 3. These other gas-specific tools suffer from the same concerns for which we decline to use the Social Cost of Carbon tool.

<sup>73</sup> SEIS at 8 (internal citations omitted).

<sup>74</sup> *Id.* at 8-9.

transportation infrastructure projects under the NGA. For the reasons discussed below, absent information persuading us otherwise, we continue to decline to employ the tool in our proceedings. Our decision not to use the tool does not in any way indicate that the Commission is not cognizant of the potentially severe consequences of climate change, does not undermine our hard look at the effects of the SMP Project and our disclosure of these effects to the public, and does not undermine informed public comment or informed agency decision making. Nevertheless, the Commission is committed to monitoring climate science, state and national targets, and climate models that may inform its decision-making.<sup>75</sup>

1. **Social Cost of Carbon is not Meaningful to Project Decisions under the NGA**

37. We continue to believe that the Social Cost of Carbon tool is more appropriately used by regulators whose responsibilities are tied more directly to fossil fuel production or consumption. The federal agencies that regulate the fossil fuel production from federal lands—e.g., the Bureau of Land Management, the Office of Surface Mining Reclamation and Enforcement, the Forest Service, the Bureau of Ocean Energy Management—are charged with determining whether to authorize a quantity of coal, oil, or natural gas production from federal lands. The federal and state agencies that regulate fossil fuel consumption—e.g., the National Highway Transportation Safety Board through corporate average fuel economy standards, the U.S. Department of Energy through energy efficiency standards for commercial equipment, state public utility commissions through certificates for proposed power plants—directly control whether some quantity of fossil fuels is burned and thus directly control whether end use GHG emissions occur. Thus, it follows that some of these agencies have chosen to use the Social Cost of Carbon tool to

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<sup>75</sup> See also *WildEarth Guardians*, 738 F.3d 298, 309 (“Because current science does not allow for the specificity demanded . . . , the BLM was not required to identify specific effects on the climate in order to prepare an adequate EIS.”).

inform their decisions<sup>76</sup> or have been faulted for failing to use it,<sup>77</sup> as noted by commenters.

38. However, the Commission's authority under section 7 of the NGA has no direct connection to the production or end use of natural gas,<sup>78</sup> and we continue to find that the Social Cost of Carbon tool is not meaningful for our decision making under the NGA. The Commission does not control the production or consumption of natural gas. Producers, consumers, and their intermediaries respond freely to market signals about location-specific supply and location-specific demand. The Commission oversees proposals to transport natural gas between those locations. For the SMP Project, the GHG emissions from end use under a worst-case full burn scenario (equal to 23 million metric tons CO<sub>2</sub>e) represent 93.3 percent of all project-related GHG emissions. Less than

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<sup>76</sup> *E.g.*, Bureau of Ocean Energy Management, Liberty Development Project: Draft EIS at 4-247 (July 2017) (using Social Cost of Carbon tool to evaluate proposed wells on Alaska's Outer Continental Shelf to produce up to 65,000 barrels of crude oil and 120 million standard cubic feet of natural gas per day for 15 to 20 years), <https://www.boem.gov/2016-010-Volume-1-Liberty-EIS/>; Office of Surface Mining Reclamation and Enforcement, Final Environmental Impact Statement for the Four Corners Power Plant and Navajo Mine Energy Project at 4.2.26 to 4.2.27 (May 1, 2015) (using Social Cost of Carbon tool to evaluate proposed 5,600-acre coal mining area and proposal to continue operating sole-source coal-fired generating station beyond original approved lifetime), <https://www.wrcc.osmre.gov/initiatives/fourCorners/documentLibrary.shtm>; *Zero Zone, Inc. v. U.S. Dep't of Energy*, 832 F.3d 654, 679 (7th Cir. 2016) (affirming the Department of Energy's use of the Social Cost of Carbon tool to monetize global benefits of energy efficiency standards for commercial equipment); Peter Fairly, *States are using social cost of carbon in energy decisions*, Inside Climate News, Aug. 14, 2017 (noting that Minnesota, Colorado, Maine, and Nevada regulators use the Social Cost of Carbon tool when evaluating proposals for new power plants).

<sup>77</sup> *E.g.*, *High Country Conservation Advocates v. Forest Serv.*, 52 F. Supp. 3d 1174, 1191 (D. Colo. 2014) (arbitrary and capricious for Forest Service to quantify benefits of proposed mining exploration on federal land but to fail to quantify costs given that Social Cost of Carbon tool was available); *Ctr. for Biological Diversity v. National Highway Transportation Safety Administration*, 538 F.3d 1172, 1217 (9th Cir. 2008) (arbitrary and capricious for agency to monetize uncertain costs of higher vehicle fuel-efficiency standards but not to monetize the benefits of carbon emission reductions using Social Cost of Carbon tool).

<sup>78</sup> Section 1(b) of the NGA specifically excludes production from the Commission's jurisdiction. 15 U.S.C. 717(b) (2012).

7 percent of GHG emissions arise from the construction and operation of the Commission-jurisdictional SMP Project facilities themselves,<sup>79</sup> and the Commission has been able to consider and thoroughly address those emissions without resorting to the Social Cost of Carbon tool.

## **2. The Commission Does Not Use Monetized Cost-Benefit Analysis**

39. Commenters urge the Commission to use the Social Cost of Carbon tool as part of a broader cost-benefit analysis for upstream, downstream, and FERC-jurisdictional facilities. They argue that the discussion of monetized benefits in the FEIS (discussed as socioeconomic impacts from the construction of the SMP Project itself) indicated that a cost-benefit analysis was already underway and incomplete without monetized costs associated with the potential upstream and downstream emissions.

40. The Council on Environmental Quality (CEQ) does not require agencies to conduct a monetary cost-benefit analysis for NEPA review and explains, moreover, that agencies “should not” display a monetary cost-benefit analysis when there are important qualitative considerations.<sup>80</sup> “NEPA does not demand that every federal decision be

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<sup>79</sup> This is the quotient of the end use emissions under a full burn scenario (23,000,000 metric tons CO<sub>2</sub>e) divided by the sum of construction, operation, and end use emissions under a full burn scenario (338,270 + 1,324,764 + 23,000,000 metric tons CO<sub>2</sub>e). The FEIS quantified the construction- and operation-related GHG emissions for the SMP Project facilities themselves. The FEIS estimated construction-related GHG emissions totaling 338,270 metric tons CO<sub>2</sub>e. *See* FEIS at 3-250 tbl.3.12.1-5 (Hillabee Expansion Project); *id.* at 3-251 tbl.3.12.1-6 (Sabal Trail Project); *id.* at 3-252 tbl.3.12.1-7 (Florida Southeast Connection Project). The FEIS estimated operation-related GHG emissions totaling 1,324,764 metric tons CO<sub>2</sub>e per year. FEIS at 3-253 tbl.3.12.1-9, 3-255 (Hillabee Expansion Project); *id.* at 3-257 tbl.3.12.1-12, 3-260 (Sabal Trail Project); *id.* at 3-260 (Florida Southeast Connection Project). The operation-related figure combines the potential-to-emit volumes for the projects’ new or modified above-ground sources with anticipated equipment leaks or blowdowns.

<sup>80</sup> 40 C.F.R. § 1502.23 (2017) (“For purposes of complying with the Act, the weighing of the merits and drawbacks of the various alternatives need not be displayed in a monetary cost-benefit analysis and should not be when there are important qualitative considerations.”); CEQ, *Final Guidance for Federal Departments and Agencies on Consideration of Greenhouse Gas Emissions and the Effects of Climate Change in National Environmental Policy Act Reviews* at 32-33 (Aug. 1, 2016) (citing same regulation and adding that “[w]hen an agency determines that a monetized assessment of the impacts of greenhouse gas emissions or a monetary cost-benefit analysis is appropriate and relevant to the choice among different alternatives being considered, such analysis may be incorporated by reference or appended to the NEPA document as an aid

verified by reduction to mathematical absolutes for insertion into a precise formula.”<sup>81</sup> Because we agree with this conclusion and because siting infrastructure necessarily involves making qualitative judgments between different resources as to which there is no agreed-upon quantitative value, the Commission does not conduct a monetary cost-benefit analysis in its NEPA review. The FEIS did quantify some of the SMP Projects’ direct socioeconomic benefits (e.g., employment and tax payments) because those benefits occur in units of dollars and are directly comprehensible in units of dollars. However, because Commission staff lacked quantified information about all of the costs and benefits of the project, the FEIS did not use the limited available quantified benefits in a cost-benefit analysis to inform Commission staff’s comparison of alternatives, choices of mitigation measures, or determination about the significance of the SMP Project’s environmental impacts.

41. To appropriately use the Social Cost of Carbon calculation for the SMP Project in our decision making, not only would we need to quantify all of the negative impacts of the project, but we would also need to calculate the project’s benefits, including, but not limited to, replacement of coal and oil by natural gas, a task no easier than calculating costs. Without complete information, an analysis using the Social Cost of Carbon calculations would necessarily be based on multiple assumptions, producing misleading results. As the courts have explained, “[m]isleading economic assumptions can defeat the first function of an EIS by impairing the agency’s consideration of the adverse environmental effects of a proposed project”<sup>82</sup> and “can also defeat the second function of an EIS by skewing the public’s evaluation of a project.”<sup>83</sup>

42. The Commission’s balancing process to determine whether a proposed natural gas transportation project is required by “the public convenience and necessity” is not skewed by our decision not to use the Social Cost of Carbon tool. Consistent with longstanding precedent, an applicant must show that benefits to be achieved by a proposed project will

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in evaluating the environmental consequences.”) (internal citations omitted), [https://obamawhitehouse.archives.gov/sites/whitehouse.gov/files/documents/nepa\\_final\\_ghg\\_guidance.pdf](https://obamawhitehouse.archives.gov/sites/whitehouse.gov/files/documents/nepa_final_ghg_guidance.pdf) (last accessed March 5, 2018).

<sup>81</sup> *Sierra Club v. Lynn*, 502 F.2d 43, 61 (5th Cir. 1974).

<sup>82</sup> *Hughes River Watershed Conservancy v. Glickman*, 81 F.3d 437, 446 (4th Cir. 1996) (citing *So. La. Env’tl. Council, Inc. v. Sand*, 629 F.2d 1005, 1011-12 (5th Cir. 1980)).

<sup>83</sup> *Id.* at 446.

outweigh the potential adverse effects.<sup>84</sup> For the SMP Project, the court upheld the Commission's determination that the project sponsors had shown market demand for the project because shipper-customers, anticipating their own ability to sell transported natural gas or the electricity generated from it to end users, entered long term binding contracts for transportation service using most of the project's incremental capacity.<sup>85</sup> These long term contracts guarantee revenue to financially support incremental transportation capacity in an area of the interstate transportation grid where the expansion of existing pipelines would not satisfy the identified demand.<sup>86</sup>

43. The Commission may consider evidence in the record of other public benefits beyond meeting unserved demand, such as eliminating bottlenecks, providing access to new supplies, lowering costs to consumers, providing new interconnects that improve the interstate grid, providing competitive alternatives, or increasing electric reliability.<sup>87</sup> These benefits accrue from the proposed project itself, not from the end use of the transported natural gas. The Commission's assessment of benefits is qualitative. The Commission first balances a proposed project's benefits against potential adverse economic effects on the project sponsor's existing customers, existing pipelines in the market and their captive customers, or landowners and communities affected by the route of the new project.<sup>88</sup> These adverse economic effects also accrue from the proposed project itself, not from the end use of the transported natural gas. The Commission's assessment of adverse economic effects is qualitative. The balancing is therefore qualitative; we do not monetize benefits or monetize adverse economic effects.

44. Only when the benefits outweigh the adverse effects on economic interests will the Commission then proceed to complete the environmental analysis where other interests are considered.<sup>89</sup> The Commission presents the environmental analysis in the NEPA document. But, as we explained above, the Commission does not use a monetized cost-benefit analysis to determine whether a proposed project's environmental impacts would

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<sup>84</sup> Certificate Policy Statement, 88 FERC ¶ 61,227 at 61,747.

<sup>85</sup> *Sierra Club*, 867 F.3d at 1378; Certificate Order, 154 FERC ¶ 61,080 at PP 76-88 (discussing need).

<sup>86</sup> *Id.*

<sup>87</sup> Certificate Policy Statement, 88 FERC at 61,748.

<sup>88</sup> *Id.* at 61,745.

<sup>89</sup> *Id.* at 61,745. This essentially means that it is Commission policy not to authorize a project that does not pass scrutiny on an economic basis, notwithstanding that a project's potential effects on the environment might prove minimal.

be significant or to determine whether and how to mitigate identified environmental impacts by imposing conditions on a certificate or denying a certificate. We do not monetize the social benefits of the proposed project itself, which would be necessary to appropriately balance against the Social Cost of Carbon tool's monetized damages for the direct GHG emissions of the proposed project. Further, we do not qualitatively or quantitatively assess the social benefits of the end use of the proposed project's transported natural gas, which would be necessary to appropriately balance against the Social Cost of Carbon tool's monetized damages for end use GHG emissions.

### **3. Technical challenges associated with the Social Cost of Carbon tool's use in Commission certificate proceedings**

45. As noted above, the Social Cost of Carbon tool estimates the monetized climate change damage associated with an incremental increase in CO<sub>2</sub> emissions in a given year. To provide a consistent approach for agencies to quantify damage in dollars from estimated emissions, the Obama Administration created the Interagency Working Group on the Social Cost of Greenhouse Gases (IWG). In 2010, and updated in 2016, the IWG released a methodology for estimating the Social Cost of Carbon values across a range of assumptions about future socioeconomic systems and physical earth systems that incorporated cost estimates based on global damages.<sup>90</sup>

46. On March 28, 2017, the Trump Administration disbanded the IWG and withdrew its reports and supporting documents as no longer representative of government policy.<sup>91</sup> In place of the IWG Social Cost of Carbon methodology, agencies were required to follow the 2003 OMB Circular A-4, which states that when agencies conduct cost-benefit analyses regarding GHG emissions, they should use Social Cost of Carbon values based on domestic, rather than global, damage costs and to use discount rates of 3 and 7 percent.<sup>92</sup> In October 2017, the EPA completed a regulatory impact analysis for its proposal to repeal the Clean Power Plan. In this document, the EPA developed Social Cost of Carbon values based on only the direct impacts of climate change anticipated to occur within U.S. borders. The Social Cost of Carbon values were presented as interim values for use in regulatory analyses until an improved estimate of the impacts of climate change to the U.S. could be developed.

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<sup>90</sup> Technical Support Document: Technical Update of the Social Cost of Carbon for Regulatory Impact Analysis Under Executive Order 12866 - Interagency Working Group on Social Cost of Greenhouse Gases, United States Government, August 2016

<sup>91</sup> Exec. Order No. 13783, 82 Fed. Reg. 16093 (Mar. 28, 2017).

<sup>92</sup> 68 Fed. Reg. 58,366 (Sept. 17, 2003).

**a. Tool Validity**

47. Sierra Club and others provided numerous comments in support of the Social Cost of Carbon tool and specifically comment on its development, the value of varying discount rates used to calculate outputs, and other tool-specific inputs and methodology concerns. In response to the statement in the SEIS that the tool does not measure the actual incremental impacts of a project on the environment, commenters assert that the tool does in fact estimate and extrapolate future environmental impacts by using U.S. Dollars (or any other monetary metric) as a metric for the environmental impacts.

48. On further review, we accept that the Social Cost of Carbon methodology does constitute a tool that can be used to estimate incremental physical climate change impacts. The integrated assessment models underlying the Social Cost of Carbon tool were developed to estimate certain global and regional physical climate change impacts due to incremental GHG emissions under specific socioeconomic scenarios. However, although the integrated assessment models could be run through a first phase to estimate global and regional physical climate change impacts from SMP Project-related GHG emissions, we would still have to arbitrarily determine what potential increase in atmospheric GHG concentration, rise in sea level, rise in sea water temperatures, and other calculated physical impacts would be significant for that particular pipeline project.

49. Moreover, the appropriate discount rate to be used in the Social Cost of Carbon tool calculations remains a contentious issue, as we have previously described: “the U.S. Environmental Protection Agency (EPA) states that “no consensus exists on the appropriate [discount] rate to use for analyses spanning multiple generations” and consequently, significant variation in output can result.”<sup>93</sup> Specifically, we continue to believe that the choice between a high discount rate of 7 percent (or higher) or a lower discount rate of 3 percent introduces substantial variation in Social Cost of Carbon tool outputs. Although numerous commenters, especially the Conservation Groups, discussed the appropriate discount rates, geographic scope, and U.S.-only Social Cost of Carbon values, we need not discuss their respective merits because we continue to believe, as discussed herein, that the Social Cost of Carbon tool is not appropriate and meaningful in the context of proceedings like this one.

**b. Social Cost of Carbon as an Indicator of Significance**

50. Commenters requested that we employ the Social Cost of Carbon tool both to provide context for downstream GHG emissions and to support a significance determination. However, we do not agree that using one number for which there is no established significance to produce another number for which there is similarly no

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<sup>93</sup> *EarthReports*, 828 F.3d at 956.

established significance (at least in the context of our examination of the relative impacts associated with a proposed pipeline) enhances our ability to reach a reasoned decision.

51. Nor do we agree with the commenters' assertions that, although there are no established significance criteria for raw volumes of GHG emissions or for the Social Cost of Carbon tool's monetized damages, agencies are required by NEPA to develop methods and procedures on their own to consider such environmental issues.<sup>94</sup> Commission staff is not aware of studies that assess the significance of monetized damages calculated with the Social Cost of Carbon tool. At most, we are able to publish estimated ranges of monetized damages under different assumptions in the Social Cost of Carbon tool. However, because we have no basis to designate a particular dollar figure calculated from the Social Cost of Carbon tool as "significant," such action would be arbitrary and would meaningfully inform neither the Commission's decision making nor the public. Moreover, if we were to calculate the Social Cost of Carbon, any two projects with the same capacity (or multiple smaller projects with an equivalent cumulative capacity), but which are designed to serve end users in different states or multiple states, will contribute identically to global climate change. Accordingly, we conclude that using the Social Cost of Carbon would not assist us in determining whether downstream GHG emissions are significant.

#### **F. Alternatives Analysis**

52. Commenters urged the Commission to use the Social Cost of Carbon tool to reject the SMP Project in favor of the No-Action Alternative.

53. In the SMP Project FEIS, Commission staff analyzed numerous Action Alternatives: eight system alternatives, twelve major route alternatives, more than twenty-five route variations, and eleven aboveground facility location alternatives. In each of these analyses, staff considered comparative environmental information to discern whether a potential alternative could provide a significant environmental advantage over the proposed action. The environmental information considered impacts on all potentially affected resources.

54. The SEIS explains that the analysis of downstream GHG emissions does not change Commission staff's prior analysis of reasonable alternatives in the FEIS.<sup>95</sup> Under a full burn scenario, the same downstream GHG emissions would result from each of the Action Alternatives because the project's transportation capacity and end-use

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<sup>94</sup> *See, e.g.*, Senators Whitehouse and Bennet November 14, 2017 Comments at 3; Sierra Club November 20, 2017 Comments at 14; Sabin Center November 17, 2017 Comments at 4.

<sup>95</sup> SEIS at 9. *See* FEIS at 4-1 to 4-61 (4.0 Alternatives).

combustion of transported natural gas would be the same under these alternatives as under the SMP Project as approved.

55. The SEIS then turns to the No Action Alternative, noting that the FEIS explained that the No Action Alternative would not lead to predictable results. As posited above, denial by the Commission of the proposed SMP Project on the grounds that combustion of the transported gas would result in unacceptable environmental impacts, would not forestall the project shippers' search for alternative means of natural gas transportation. All the power plants that would be served by the SMP had previously obtained state approval, thus Commission staff concluded that the plant owners would likely obtain alternative sources of fuel.<sup>96</sup> Consequently, the No Action Alternative would only eliminate one potential source of fuel but would not decrease the ultimate consumption of fossil fuel to satisfy demand for electricity or reduce GHG emissions. For example, the project's shippers might seek to transport the same volumes of natural gas by subscribing to other expansions of existing transportation systems or seeking the construction of other new facilities. The SEIS concludes that because the No Action Alternative could result in lesser, equal, or greater GHG emissions (which, because of their speculative nature, we are unable to estimate) than the SMP Project, the Commission cannot use the quantified downstream GHG emissions from the SMP Project to meaningfully compare the two. We accept this conclusion.

### **G. Mitigation**

56. Several commenters call for mitigation measures to address downstream GHG emissions. An environmental impact statement must discuss possible mitigation measures for adverse environmental consequences.<sup>97</sup> The GHG emissions anticipated from the construction and operation of the SMP Project represent approximately 6.7 percent of the upper bound project-related GHG emissions disclosed in the SEIS.<sup>98</sup>

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<sup>96</sup> FEIS at 1-4. *See also* Florida Public Service Commission, *Final order granting Duke Energy's petition for determination of need for a combined cycle power plant located in Citrus County*, Docket No. PSC-14-0557-FOF-EI (Oct. 10, 2014); *Florida Power & Light Company, Petition for determination of need for Okeechobee Clean Energy Center Unit 1*, Docket No. 150196-EI (Dec. 23, 2015).

<sup>97</sup> *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 351-353 (1989).

<sup>98</sup> This figure represents construction- and operation-related emissions (338,270 + 1,324,764 metric tons CO<sub>2</sub>e) divided by combined emissions under a full burn scenario (338,270 + 1,324,764 + 23,000,000 metric tons CO<sub>2</sub>e). The FEIS quantified the construction- and operation-related GHG emissions for the SMP Project facilities themselves. *See supra* note 75.

The FEIS described in detail the federal and state regulatory regimes that will control the SMP Project's direct emission sources.<sup>99</sup> The FEIS also discussed mitigation measures for construction emissions, such as limiting the idling of engines when construction equipment is not in use,<sup>100</sup> and mitigation measures for operation emissions, such as preventive maintenance to identify leaks and commitments to reduce the frequency of unscheduled maintenance blowdowns,<sup>101</sup> as well as mitigation measures dealing with the full spectrum of environmental resources.<sup>102</sup> The SEIS does not recommend additional mitigation measures to be implemented by the project proponents.<sup>103</sup>

57. We do not believe there are any additional mitigation measures the Commission could impose with respect to the GHG emissions analyzed in the SEIS. The Commission lacks jurisdiction to impose mitigation measures on downstream end-use consumers, be they power plants, manufacturers, or others. The SEIS explains that federal and state regulatory agencies, such as the U.S. Environmental Protection Agency and the Florida Department of Environmental Protection, have authority to regulate power plant emissions under the federal Clean Air Act.<sup>104</sup> Authority may also exist under state law.

### **III. Conclusion**

58. In conformance with the court's opinion, the SEIS quantifies the GHG emissions from downstream use of natural gas transported on the SMP Project and provides context for these emissions in comparison to annual state and national GHG emissions. The SEIS explains that there is no way to determine the significance of the SMP Project's downstream GHG emissions using the Social Cost of Carbon tool or other methodologies. The SEIS also notes that the downstream GHG emissions do not alter the analysis of reasonable alternatives in the FEIS and do not justify additional mitigation measures.

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<sup>99</sup> FEIS at 3-241 to 3-249 (including applicable state law in Mississippi, Alabama, Georgia, and Florida).

<sup>100</sup> *E.g., id.* at 3-250 to 3-251.

<sup>101</sup> *E.g., id.* at 3-257.

<sup>102</sup> *Id.* at 5-14 to 5-21 (recommended mitigation).

<sup>103</sup> SEIS at 7.

<sup>104</sup> *Id.* at 7.

59. We also conclude that, for the reasons discussed above, the Social Cost of Carbon tool is not useful in determining whether, and under what conditions, to authorize a proposed natural gas transportation project.

60. After full consideration of the SMP Project's GHG emissions in the SEIS and the analysis contained in the final EIS, we continue to find that the project, as mitigated, is an environmentally acceptable action. Nothing in the SEIS causes us to question our previous findings about benefits of the SMP Project.

61. Because the SMP Project is consistent with the criteria discussed in the Certificate Policy Statement and is an environmentally acceptable action, we find that the public convenience and necessity requires approval of projects, as conditioned in the Certificate Order.

The Commission orders:

The Commission reinstates its authorizations issued to Transcontinental Gas Pipe Line Company, LLC; Sabal Trail Transmission LLC; and Florida Southeast Connection LLC in the Commission's order issued February 2, 2016, in 154 FERC ¶ 61,080 (2016), as amended by the Commission's order on rehearing, 154 FERC ¶ 61,160 (2016).

By the Commission. Commissioner LaFleur is dissenting in part with a separate statement attached.  
Commissioner Glick is dissenting with a separate statement attached.

( S E A L )

Kimberly D. Bose,  
Secretary.

UNITED STATES OF AMERICA  
FEDERAL ENERGY REGULATORY COMMISSION

Florida Southeast Connection, LLC	Docket Nos.	CP14-554-002
Transcontinental Gas Pipe Line Company, LLC		CP15-16-003
Sabal Trail Transmission, LLC		CP15-17-002

(Issued March 14, 2018)

LaFLEUR, Commissioner, *dissenting in part*:

Today’s order reinstates the certificate authorizations for the Southeast Market Pipelines Project (SMP Project).<sup>1</sup> I still believe that the SMP Project is in the public interest after carefully balancing the need for the project and its environmental impacts. In particular, I find that the SMP Project is needed to deliver gas to four downstream power plant customers.<sup>2</sup>

The U.S. Court of Appeals for the D.C. Circuit (the “Court”) vacated and remanded the Commission’s authorization of the SMP Project, directing the Commission to address two issues; first, the Commission was directed to both quantify and consider the project’s downstream greenhouse gas (GHG) emissions or explain in more detail why it cannot do so; and second, the Commission was directed to explain whether it still adheres to its prior position that the Social Cost of Carbon tool is not useful in performing its NEPA review.<sup>3</sup> I am dissenting in part because I cannot support the Commission’s responses to the Court on downstream GHG emissions and the Social Cost of Carbon.

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<sup>1</sup> *Florida Southeast Connection, LLC*, 162 FERC ¶ 61,233 (2018).

<sup>2</sup> SEIS at 3-4 (identifying four power plants as end-use customers of the SMP Project volumes: the new Florida Power and Light Company (FPL) Okeechobee Clean Energy Center; the Duke Energy Citrus County Combined Cycle Plant; and both the existing FPL Martin County Power Plant and Rivera Beach Clean Energy Center).

<sup>3</sup> *Sierra Club v. FERC*, 867 F.3d 1357 (D.C. Cir. 2017) (*Sierra Club*).

## GHG Emissions

I agree with the Court in *Sierra Club* that the downstream GHG emissions that result from burning the natural gas transported by the SMP Project are an indirect impact of the project.<sup>4</sup> I believe that, even though this Commission does not authorize the construction of power plants to burn the gas transported by the SMP Project, there is still a causal relationship between the SMP Project and the end-use emissions generated from the four downstream power plants and those emissions are reasonably foreseeable.<sup>5</sup> As directed by the Court, in the final Supplemental Environmental Impact Statement (SEIS)<sup>6</sup> Commission staff quantified the gross, net and full burn of downstream GHG emissions.<sup>7</sup> I believe that this analysis is appropriate and consistent with how the Commission should conduct its environmental review of pipeline projects.

While the Commission appropriately calculated the emissions in the SEIS consistent with the Court's directive, I am troubled by the manner in which today's order addresses the significance of the downstream GHG emissions. The order fails to even concede that GHG emissions are an indirect impact that must be quantified in NEPA. More broadly, the order asserts that GHG emissions quantifications cannot "meaningfully inform" our public interest determination. I fundamentally disagree.

NEPA requires us to include discussion of indirect effects and their significance in our environmental review. The order states that Commission staff is unable to determine whether the gross and net estimates of downstream GHG emissions are significant and the order affirms that finding.<sup>8</sup> I reject the contention that the Commission is unable to discern the significance of GHG emissions. We are required by NEPA to reach a determination regarding the significance of all environmental impacts, including

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<sup>4</sup> *Sierra Club*, 867 F.3d at 1374.

<sup>5</sup> 40 C.F.R. § 1508.8(b) (2017) (Indirect impacts are "*caused by the action and are later in time or farther removed in distance, but still are reasonably foreseeable.*" Indirect impacts "may include growth inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems.").

<sup>6</sup> 83 Fed. Reg. 6172.

<sup>7</sup> SEIS at 4.

<sup>8</sup> 162 FERC ¶ 61,233 at P 27.

downstream GHG emissions. It is our responsibility to use the best information we have to make that determination.

In this case, we can gauge significance by comparing the gross and net GHG emissions of the SMP Project to the total state and national emission inventories to calculate how the SMP Project increases those GHG inventories.<sup>9</sup> Here, I believe that a net increase of 3.6 percent of the Florida inventory for a single pipeline project is significant. Due to the need of the project, I believe that increase is acceptable but should be disclosed and assessed.

### Social Cost of Carbon

On the Court's second issue, I cannot support the Commission's response to the Court regarding the Commission's use of the Social Cost of Carbon as part of its pipeline environmental review. In the SEIS, Commission staff explained that the Social Cost of Carbon tool was not appropriate for our NEPA review, and stated that the questions surrounding the Commission's policy on the Social Cost of Carbon were more appropriate for Commission determination. I generally agree that the Social Cost of Carbon as a tool for cost-benefit analysis does not fit neatly within our NEPA review.<sup>10</sup> The Social Cost of Carbon has traditionally been used as a means to monetize the cost impacts of carbon emissions, as part of an overall cost and benefits approach to an agency's consideration of a proposed action or rulemaking. The Commission does not monetize the costs and benefits of a proposed pipeline project, largely, because to date, we have not sought to develop the record with evidence that would support this type of cost-benefit approach to our pipeline reviews.

However, I cannot accept the Commission's justifications for excluding the Social Cost of Carbon from its consideration of the SMP Project. Today's order generally finds that the Social Cost of Carbon cannot meaningfully inform our decisions on proposed pipeline projects. Further, the order claims that the Social Cost Carbon is not an appropriate tool for evaluating the significance of downstream GHG emissions. I disagree. That is precisely the use for which the Social Cost of Carbon was developed—

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<sup>9</sup> While Florida does not have a statewide carbon reduction target, 22 states do, which could be a relevant basis of comparison in pipeline dockets. Further, if the United States were to establish a national carbon reduction policy or rejoin an international carbon reduction agreement, those targets could be relevant to our analysis. *See* <https://www.usclimatealliance.org/> and <https://www.c2es.org/document/greenhouse-gas-emissions-targets/>

<sup>10</sup> 40 C.F.R. § 1502.23 (2017) (Cost-benefit analysis).

it is a scientifically-derived tool to translate tonnage of carbon dioxide or other GHGs to the cost of long-term climate harm.<sup>11</sup> I have drawn the simplistic analogy of human food consumption and diet. It would be convenient for a person to say “I guess it is fine to eat this donut, because there is simply no way to assess if it will make me fat.” But there is such a tool, in the form of calories, which have been scientifically derived to translate the consumption of a specific food item to impact on weight gain. Similarly, we are able to estimate what the long-term consequence of a ton of carbon dioxide emissions is likely to be, by use of the Social Cost of Carbon tool.

Today’s order recites a number of technical and policy arguments to attack the usefulness of the Social Cost of Carbon. It is true, as the majority asserts, that utilizing gross GHG emissions associated with the gas to be transported through a pipeline would yield the same Social Cost of Carbon calculation for every pipeline of equivalent size. But, if the Commission had information regarding net GHG emissions, I believe we could better account for changes in GHG emissions resulting from the end-use of the transported gas, and calculate a Social Cost of Carbon that accurately reflects the climate change impacts of a particular project.

The majority concedes that those involved in the upstream production and downstream consumption of fossil fuels may meaningfully use the Social Cost of Carbon in assessing their actions, but nonetheless rejects the view that the pipeline that links production and consumption can use that same metric to assess its actions.<sup>12</sup> That distinction is unpersuasive to me.

The majority also contends that there are technical challenges due to the lack of consensus on the appropriate discount rate. However, the Commission could estimate the appropriate discount rate or to use more than one discount rate in our calculations or to provide a range of numbers for consideration.

Looking more broadly at both GHG emission and Social Cost of Carbon, much of the majority’s criticism simply reflects the fact that consideration of climate change in our pipeline reviews is difficult. I agree that consideration of climate change is difficult. That is because climate change is broader in scope and scale than other environmental impacts generally considered in our pipeline reviews. However, the nature of the issue does not relieve us of the burden of considering it, but rather makes it more important that we do so.

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<sup>11</sup> [https://www.epa.gov/sites/production/files/2016-12/documents/social\\_cost\\_of\\_carbon\\_fact\\_sheet.pdf](https://www.epa.gov/sites/production/files/2016-12/documents/social_cost_of_carbon_fact_sheet.pdf)

<sup>12</sup> 162 FERC ¶ 61,233 at PP 37-38.

I recognize that Commission consensus on the usefulness of the quantification of GHG emissions and the value of the Social Cost of Carbon in our pipeline dockets may be difficult to achieve. I myself have definitely struggled with these questions over the past few years. I appreciate that the Commission has tried to be responsive to increasing comments in our pipeline dockets on GHG emissions and climate change by disclosing progressively more information in our NEPA documents and orders on GHG upstream and downstream emissions.<sup>13</sup> I have strongly supported our doing so. However, we have now had a pipeline certificate vacated for failure to fully consider GHG emissions and Social Cost of Carbon, so we must more squarely address them. Since downstream GHG impacts have been established as an indirect impact of the SMP Project, we must consider them in making a public interest determination, however difficult that may be.

Finally, I believe that the best way to address climate change and the Social Cost of Carbon in pipeline dockets would be for the Commission to develop a more complete record on costs and benefits of the proposed project, including more information on the need for a project, the likely end-uses of the transported gas, and the alternatives. Commissioner Glick states the following in his dissent of the order, “The Commission should not fear adding transparency to its decision-making process. Rather, we should embrace the opportunity to disclose the effects which may not always be adverse.” I agree. Such increased openness will enhance public confidence in the Commission’s natural gas pipeline certification decision-making process. I am hopeful that the recently announced generic proceeding on pipeline review will allow the Commission and its stakeholders to consider all these issues in a meaningful and comprehensive way.

For all of these reasons, I respectfully dissent in part.

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Cheryl A. LaFleur  
Commissioner

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<sup>13</sup> See, e.g., *Constitution Pipeline Company, LLC*, 154 FERC 61,046 (2016); *Nexus Gas Transmission, LLC*, 160 FERC ¶ 61,022 (2017); *PennEast Pipeline Company, LLC*, 162 FERC ¶ 61,053 (2017); and *Columbia Gas Transmission, LLC*, 161 FERC ¶ 61,314 (2017).

UNITED STATES OF AMERICA  
FEDERAL ENERGY REGULATORY COMMISSION

Florida Southeast Connection, LLC	Docket Nos.	CP14-554-002
Transcontinental Gas Pipe Line Company, LLC		CP15-16-003
Sabal Trail Transmission, LLC		CP15-17-002

ORDER ON REMAND REINSTATING CERTIFICATE AND ABANDONMENT  
AUTHORIZATION

(Issued March 14, 2018)

GLICK, Commissioner, *dissenting*:

In today's order on remand from the United States Court of Appeals for the District of Columbia Circuit,<sup>1</sup> the Commission once again claims it cannot assess the significance of the downstream GHG emissions in its environmental review of the Southeast Markets Pipelines Project (SMP Project). Vacating the Commission's prior decision granting the Project certificates under section 7 of the Natural Gas Act (NGA), the *Sabal Trail* Court held that FERC erred by failing to "either quantify *and* consider the project's downstream carbon emissions or explain in more detail why it cannot do so."<sup>2</sup> In addition, the Court held that FERC must explain whether using the Social Cost of Carbon is a useful tool for evaluating the environmental impact of GHG emissions pursuant to the National Environmental Policy Act (NEPA).<sup>3</sup> I believe today's order fails to provide a reasoned answer to either inquiry and, as such, does not adequately respond to the Court's mandate.<sup>4</sup>

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<sup>1</sup> *Sierra Club v. FERC*, 867 F.3d 1357 (D.C. Cir. 2017) (*Sabal Trail*).

<sup>2</sup> *Sabal Trail*, 867 F.3d at 1375 (emphasis added).

<sup>3</sup> *Id.*; National Environmental Policy Act of 1969, Pub. L. No. 91-190, 83 Stat. 852 (1970).

<sup>4</sup> *See, e.g., Process Gas Consumers Grp. v. FERC*, 292 F.3d 831, 840 (D.C. Cir. 2002) (In proceedings on remand, the court reviews the Commission's determinations to ensure that they are responsive to its mandate.) Furthermore, as with all Commission orders, the Administrative Procedure Act's arbitrary and capricious and reasoned

While the Commission's order includes quantitative estimates, the Commission refuses to actually consider the environmental impact from the GHG emissions.<sup>5</sup> Instead, the Commission hews to the view that these calculations provide "no basis for determining the significance of impacts from these emissions."<sup>6</sup> The Commission argues that because there is no "widely accepted standard to ascribe significance to a given rate or volume" of GHG emissions, it cannot reach a finding. And for similar reasons, the Commission asserts that it is not appropriate to use the Social Cost of Carbon tool to evaluate the Project's environmental impacts. The Commission's refusal to incorporate the Social Cost of Carbon in the environmental review or even to assess the impact GHG emissions from the Project fails to fulfill its responsibilities under the NGA and NEPA.<sup>7</sup> It also belies any assertion in the order that the Commission is actually "cognizant of the potentially severe consequences of climate change."<sup>8</sup>

Climate change is the single most significant threat to humanity, fundamentally threatening our environment, economy, national security and human health.<sup>9</sup> It is

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decisionmaking standards apply to challenges under the NGA and NEPA. *See Columbia Gas Transmission Corp. v. FERC*, 628 F.2d 578, 593 (D.C. Cir. 1979); *Nevada v. Dep't of Energy*, 457 F.3d 78, 87 (D.C. Cir. 2006).

<sup>5</sup> *Florida Southeast Connection, LLC*, 162 FERC ¶ 61,233, at PP 2, 26 (affirming the conclusion that the Commission cannot "reach a finding whether downstream GHG emissions are significant"). In contrast, the D.C. Circuit in *Sabal Trail* held that the Commission is obligated not only to provide a quantitative estimate but also to discuss the significance of greenhouse-gas emissions. *Sabal Trail*, 867 F.3d at 1373 (citing *Minisink Residents for Env'tl. Pres. & Safety v. FERC*, 762 F.3d 97, 101-02 (D.C. Cir. 2014) & *Myersville Citizens for a Rural Cmty. v. FERC*, 783 F.3d 1301, 1309 (D.C. Cir. 2015)) (internal citations omitted).

<sup>6</sup> *Florida Southeast Connection, LLC*, 162 FERC ¶ 61,233 at P 15; *see id.* P 51.

<sup>7</sup> *See Pub. Utils. Comm'n of Cal. v. FERC*, 900 F.2d 269, 281 (D.C. Cir. 1990); *Dep't of Transp. v. Pub. Citizen*, 541 U.S. 752, 763 – 64 (2004). *See also supra* notes 12 – 16 and accompanying text.

<sup>8</sup> *Florida Southeast Connection, LLC*, 162 FERC ¶ 61,233 at P 36.

<sup>9</sup> Xu, Yangyang & Veerabhadran Ramanathan, Proceedings of the National Academy of Sciences, *Well Below 2°C: Mitigation strategies for avoiding dangerous to catastrophic climate changes* (2017), <http://www.pnas.org/content/114/39/10315> (Researchers evaluating models of future climate scenarios identify that there is a one-in-20 chance of temperature increase causing catastrophic damage or worse by 2050 and

difficult to understand how NEPA's demand that an agency take a "hard look"<sup>10</sup> at the environmental impacts of its actions can be satisfied if the impacts of GHG emissions are ignored.

Under both the NGA and NEPA, the Commission is obligated to consider the environmental impacts of its decisions. In enacting the NGA, Congress determined that the "business of transporting and selling natural gas for *ultimate distribution to the public* is affected with the public interest."<sup>11</sup> As such, no entity may transport or sell natural gas interstate or construct or expand interstate natural gas facilities without the Commission first determining the activity is in the public interest. This requires finding, on balance, that the benefits outweigh the harms, including impacts on the environment.<sup>12</sup>

Just as system reliability bears on the public interest in terms of the benefits and need for natural gas pipeline capacity, climate change bears on the public interest in terms of the adverse effects of that same pipeline capacity. It is imperative that the Commission disclose, weigh and balance such critical public interest impacts given our exclusive authority over the siting of interstate natural gas pipelines.

It is axiomatic that the Commission must consider the environmental impacts of its decisions under NEPA.<sup>13</sup> As the D.C. Circuit explains in *Sabal Trail* "[o]ne of the most

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unknown risks imply existential threats to humanity).

<sup>10</sup> See 42 U.S.C. § 4332(2)(C)(iii); *Balt. Gas & Elec. Co. v. Nat. Res. Def. Council, Inc.*, 462 U.S. 87, 97 (1983).

<sup>11</sup> 15 U.S.C. § 717 (emphasis added).

<sup>12</sup> The *Sabal Trail* Court explicitly recognized this mandate, explaining that "Congress broadly instructed the agency to consider 'the public convenience and necessity' when evaluating applications to construct and operate interstate pipelines" and that, in doing so, the Commission "will balance 'the public benefits against the adverse effects of the project,' including adverse environmental effects." 867 F.3d 1357, 1373 (citing *Minisink Residents for Env'tl. Pres. & Safety v. FERC*, 762 F.3d 97, 101-02 (D.C. Cir. 2014) and *Myersville Citizens for a Rural Cmty. v. FERC*, 783 F.3d 1301, 1309 (D.C. Cir. 2015)) (internal citations omitted); see also *Pub. Utils. Comm'n of Cal. v. FERC*, 900 F.2d 269, 281 (D.C. Cir. 1990) (The public interest standard under the NGA includes factors such as the environment and conservation, particularly as decisions concerning the construction, operation, and transportation of natural gas in interstate commerce "necessarily and typically have dramatic natural resource impacts.").

<sup>13</sup> Congress, through its NEPA requirement, "declares a broad national

important procedures NEPA mandates is the preparation, as part of every ‘major Federal action[] significantly affecting the quality of the human environment,’ of a ‘detailed statement’ discussing and disclosing the environmental impact of the action.”<sup>14</sup> The environmental review has dual purposes: it forces an agency to take a “hard look” at the environmental consequences of its action, and it ensures that these environmental consequences, and the agency’s consideration of them, are fully disclosed to the public.<sup>15</sup>

The *Sabal Trail* Court leaves no room to question that “greenhouse-gas emissions are an indirect effect of authorizing this project, which FERC could reasonably foresee, and which the agency has legal authority to mitigate.”<sup>16</sup> Nevertheless, the Commission, through today’s order, is engaging in a collateral attack on the Court’s decision by

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commitment to protecting and promoting environmental quality,” and brings that commitment to bear on federal agency decisionmaking. *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 348 (1989). As the *Sabal Trail* Court reiterates, NEPA “commands agencies to imbue their decisionmaking, through the use of certain procedures, with our country’s commitment to environmental salubrity.” 867 F.3d at 1367 (quoting *Citizens Against Burlington, Inc. v. Busey*, 938 F.2d 190, 193-94 (D.C. Cir. 1991)).

<sup>14</sup> *Sabal Trail*, 867 F.3d at 1367 (citing *WildEarth Guardians v. Jewell*, 738 F.3d 298, 302 (D.C. Cir. 2013); *id.* (explaining that NEPA is “primarily information-forcing” and does not require agencies to take one type of action or another”).

<sup>15</sup> *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 349 (1989) (The statutory requirement that a federal agency contemplating a major action prepare an environmental impact statement serves NEPA’s purpose of infusing federal agency decisionmaking with a “broad national commitment to protecting and promoting environmental quality” in two important respects. “It ensures that the agency, in reaching its decision, will have available, and will carefully consider, detailed information concerning significant environmental impacts; it also guarantees that the relevant information will be made available to the largest audience that may also play a role in both the decisionmaking process and the implementation of that decision.” (citing *Balt. Gas & Elec. Co. v. Nat. Res. Def. Council, Inc.*, 462 U.S. 87, 97 (1983) & *Weinberger v. Catholic Action of Hawaii/Peace Education Project*, 454 U.S. 139, 143 (1981)); *see also Dep’t of Transp. v. Pub. Citizen*, 541 U.S. 752, 768 (2004).

<sup>16</sup> *Sabal Trail*, 867 F.3d at 1374 (citing the Commission’s authority, pursuant to the NGA, to “attach to the issuance of the certificate and to the exercise of the rights granted thereunder such reasonable terms and conditions as the public convenience and necessity may require,” 15 U.S.C. 717f(e)).

suggesting that it is not the Commission’s “job” to consider whether emissions from “the *end use* of the gas would be too harmful to the environment.”<sup>17</sup> I disagree with the Commission and agree with the court.<sup>18</sup> “What are the ‘reasonably foreseeable effects’ of authorizing a pipeline that will transport natural gas to Florida power plants?” the Court asks. First, “that the gas will be burned in those power plants” and, second, “that burning natural gas will release into the atmosphere the sorts of carbon compounds that contribute to climate change.”<sup>19</sup> Both, the Court concludes, are reasonably foreseeable indirect effects from this project and, as such, the Commission has a duty to conduct a thorough evaluation of the consequent GHG effects pursuant to NEPA.<sup>20</sup>

In other words, the Commission must take a “hard look” at climate change – the ultimate environmental impact. The responsible way to do so today is by converting the GHG emissions estimates to concrete impacts by way of the Social Cost of Carbon. As the *Sabal Trail* Court explained, the Social Cost of Carbon tool values the long-term harm done by each ton of carbon emitted in dollar terms. The D.C. Circuit is not the first court to recognize an agency’s obligation to value the climate change impacts of its decisions,<sup>21</sup> and I am confident that it will not be the last.

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<sup>17</sup> *Florida Southeast Connection, LLC*, 162 FERC ¶ 61,233 at P 29.

<sup>18</sup> The Commission must fully comply with the court’s mandate in an order on remand, and the court “has the power to enforce its mandates, including the power to ‘correct any misconception of its mandate by a[n] . . . administrative agency subject to its authority.’” *Atl. City Elec. Co. v. FERC*, 329 F.3d 856 (D.C. Cir. 2003).

<sup>19</sup> *Sabal Trail*, 867 F.3d at 1371-72 (explaining that in this case the end use is not only reasonably foreseeable, but also is “the project’s entire purpose.”); *id.* at 1372 (“All the natural gas that will travel through these pipelines will be going somewhere: specifically, to power plants in Florida, some of which already exist, others of which are in the planning stages. Those power plants will burn the gas, generating both electricity and carbon dioxide. And once in the atmosphere, that carbon dioxide will add to the greenhouse gas effect, which the EIS describes as ‘the primary contributing factor’ in global climate change.”).

<sup>20</sup> *Id.* at 1374.

<sup>21</sup> See *Montana Env’tl Info. Ctr. v. U.S. Office of Surface Mining*, 274 F. Supp. 3d 1074, 1097 (D. Mont. 2017), *amended in part, adhered to in part sub nom. Montana Env’tl. Info. Ctr. v. United States Office of Surface Mining*, No. CV 15-106-M-DWM, 2017 WL 5047901 (D. Mont. Nov. 3, 2017); *High Country Conservation Advocates v. U.S. Forest Serv.*, 52 F. Supp. 3d 1174, 1193 (D. Colo. 2014) (requiring agency to use the Social Cost of Carbon protocol when calculating costs and benefits of action that would

Quantifying and disclosing downstream GHG emission tonnage is a necessary step to value the environmental impacts of climate change, but does not actually assess the impact. As the courts note, the “the basic thrust of an agency’s responsibilities under NEPA is to predict the environmental effects of proposed action before the action is taken and those effects fully known.”<sup>22</sup> Thus, inherent in our obligation to consider indirect environmental effects is the obligation to engage in reasonable forecasting and speculation.<sup>23</sup> Therefore, the assessment of the GHG tonnage, using a widely available analytical tool adopted across government agencies delivering a “measure, in dollars, of the long-term damage done by a ton carbon dioxide”<sup>24</sup> provides a meaningful method to convert the data input of GHG emission tonnage into a qualitative output demonstrating impact.

If we are to follow the logic of the Commission’s order, that the significance of GHG emissions cannot be assessed because there are no Federal or state emissions limits or goals, no Federal agency would ever be able to evaluate the impact of an agency action on climate change. It is absurd to even contemplate NEPA not applying to the most significant environmental issue of our time.

The Commission should not fear adding such transparency to its decisionmaking process. Rather, we should embrace the opportunity to disclose the effects which may not always be adverse.<sup>25</sup>

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generate greenhouse gas emissions); *see also* *Ctr. for Biological Diversity v. Nat’l Highway Traffic Safety Admin.*, 538 F.3d 1172, 1217 (9th Cir. 2008) (holding that NEPA requires agencies to analyze the effects of its actions on global climate change).

<sup>22</sup> *City of Davis v. Coleman*, 521 F.2d 661, 677 (9th Cir.1975).

<sup>23</sup> *Id.* (as such “[r]easonable forecasting and speculation is thus implicit in NEPA”); *see also* *Delaware Riverkeeper*, 753 F.3d 1304, 1310 (D.C. Cir. 2014) (*citing* *Scientists’ Inst. for Pub. Info., Inc. v. Atomic Energy Comm’n*, 481 F.2d 1079, 1092 (D.C. Cir. 1973)); *Sierra Club v. U.S. Dep’t of Energy*, 867 F.3d 189, 198 (2017) (An agency “need not foresee the unforeseeable, but by the same token neither can it avoid [consideration of environmental impacts] simply because describing the environmental effects of and alternatives to particular agency action involves some degree of forecasting.”).

<sup>24</sup> EPA Fact Sheet Social Cost of Carbon, (Dec. 2016) *available at* [https://www.epa.gov/sites/production/files/2016-12/documents/social\\_cost\\_of\\_carbon\\_fact\\_sheet.pdf](https://www.epa.gov/sites/production/files/2016-12/documents/social_cost_of_carbon_fact_sheet.pdf).

<sup>25</sup> In some cases a proposed pipeline may reduce downstream greenhouse gas

The order also argues against the Social Cost of Carbon based on perceived technical challenges including the presence of assumptions or unknowns, such as discount rate, or absence of widely accepted standards to ascribe significance. However, this does not diminish the Commission's responsibility to provide a qualitative assessment, rather the Commission simply must make a disclosure "so that readers can take the resulting estimates with the appropriate amount of salt."<sup>26</sup> In fact, NEPA reviews often include calculated estimates, modeling, and associated disclosures relevant to the qualitative assessment such as land use impacts and workforce impacts. Further, in cases where the Commission suffers from a lack of information, it is able to use the pre-filing process and subsequent data inquiries to gather critical information. Commissioner LaFleur stated the following in her partial dissent to the order, "the best way to address climate change and the Social Cost of Carbon in pipeline dockets would be for the Commission to develop a more complete record on costs and benefits of the proposed projects, including more information on the needs for a project" and I agree.

The SMP Project final environmental impact statement (EIS) takes this approach even for assessing indirect economic effects relying on a calculation tool and multiple assumptions.<sup>27</sup> While no significance is ascribed to these figures built off of assumptions, the raw values are still provided as an "indicator of the economic impacts of a project,"<sup>28</sup> and as such, part of the qualitative NEPA analysis. Further, the courts have held that where an agency's EIS calculates the benefits of a proposed action, the EIS must use the Social Cost of Carbon to assess the impacts of GHG emissions.<sup>29</sup>

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emissions, particularly in cases where expanded access to natural gas supports reducing reliance on other fossil fuel sources with higher greenhouse gas emission rates.

<sup>26</sup> *Sabal Trail*, 867 F.3d at 1374-75 ("We understand that 'emission estimates would be largely influenced by assumptions rather than direct parameters about the project. . . but some educated assumptions are inevitable in the NEPA process. . . . And the effects of assumptions on estimates can be checked by disclosing those assumptions. . . .'); *id.* ("Nor is FERC excused from making emissions estimates just because the emissions in question might be partially offset by reductions elsewhere."); *see also WildEarth Guardians v. Jewell*, 738 F.3d 298, 309 (D.C. Cir. 2013).

<sup>27</sup> FEIS at 3-187.

<sup>28</sup> *Id.*

<sup>29</sup> *See e.g., Montana Env'tl Info. Ctr. v. U.S. Office of Surface Mining*, 274 F. Supp. 3d 1074, 1097 (D. Mont. 2017), *amended in part, adhered to in part sub nom. Montana Env'tl. Info. Ctr. v. United States Office of Surface Mining*, No. CV 15-106-M-

In this same spirit, the output from the Social Cost of Carbon tool can serve as an indicator of the climate change impact, as required in *Sabal Trail*, informing the overall qualitative evaluation under NEPA as well as the public interest balancing under the NGA. Rejecting this tool on the grounds that the Commission has “no basis for determining the significance” of the impact amounts is arbitrary and capricious, given that the Commission relies on similar analysis elsewhere in the EIS.

Willful ignorance of readily available analytical tools to support an enhanced qualitative assessment for the single largest environmental threat in our lifetime will undermine informed public comments and informed decisionmaking. Furthermore, the void in evaluating indirect environmental impacts from GHG emission while simultaneously concluding there is no significant impact means the Commission remains in the unstable position of granting certificates of public convenience and necessity without fully considering the public interest under the NGA.

Public confidence in the Commission’s approach to considering applications for interstate gas pipeline certificates of public convenience and necessity continues to wane.<sup>30</sup> I fear that today’s order, by limiting analysis of the environmental impacts of a proposed pipeline, will both increase the Commission’s litigation risk and contribute further to the cynicism of the pipeline siting process.

For these reasons, I respectfully dissent.

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Richard Glick  
Commissioner

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DWM, 2017 WL 5047901 (D. Mont. Nov. 3, 2017); *High Country Conservation Advocates v. U.S. Forest Serv.*, 52 F. Supp. 3d 1174, 1193 (D. Colo. 2014).

<sup>30</sup> Masslive, U.S. Sen. Elizabeth Warren pushes bill to boost public access to FERC proceedings (May 2017), [http://www.masslive.com/politics/index.ssf/2017/05/us\\_sens\\_elizabeth\\_warren\\_and\\_j.html](http://www.masslive.com/politics/index.ssf/2017/05/us_sens_elizabeth_warren_and_j.html).