

# Testing the Waters: Assessing Wisconsin's Regulatory Climate for Offshore Wind Projects

Marvin C. Bynum II

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# TESTING THE WATERS: ASSESSING WISCONSIN'S REGULATORY CLIMATE FOR OFFSHORE WIND PROJECTS

I. INTRODUCTION.....	1534
II. AN AERIAL VIEW: THE HISTORY OF WIND POWER DEVELOPMENT .....	1538
A. <i>The Bold Country: Europe's Wind Power Regulatory Scheme</i> ...	1539
1. Model Citizens: The European Union's Cooperative Approach.....	1539
2. A (Too) Simple Plan?: The United Kingdom's Planning Act 2008.....	1543
B. <i>Wind Power Development in the United States</i> .....	1546
1. Rookie Success: Boom Times for Land-Based Wind Projects.....	1546
2. In Too Deep?: Venturing Into the Unfamiliar Territory of Offshore Wind Farms .....	1547
a. <i>Potential Benefits</i> .....	1548
b. <i>Controversies and Challenges</i> .....	1551
i. A Cautionary Tale: The Cape Wind Project.....	1551
ii. Other Potential Concerns .....	1552
III. NEITHER TOO HOT NOR TOO COLD, BUT FAR FROM JUST RIGHT: THE CURRENT REGULATORY CLIMATE FOR OFFSHORE WIND DEVELOPMENT.....	1556
A. <i>Federal Regulatory Authority</i> .....	1556
1. The Permitting Process .....	1556
a. <i>Rivers and Harbors Appropriations Act</i> .....	1557
b. <i>Clean Water Act</i> .....	1558
c. <i>National Environmental Policy Act</i> .....	1560
2. Renewable Energy Policy .....	1562
B. <i>Wisconsin Regulatory Authority</i> .....	1563
1. The Permitting Process .....	1563
a. <i>Public Utilities Statutes</i> .....	1565
b. <i>The Public Trust Doctrine</i> .....	1568
c. <i>The Wisconsin Environmental Policy Act</i> .....	1570
2. Renewable Energy Policy .....	1571

IV. TINKERING WITH WISCONSIN’S NOVEL EXPERIMENT: CREATING OPPORTUNITIES TO TEST OFFSHORE WIND ENERGY.....	1573
A. <i>Smoother Sailing: Streamlining the Permitting Process for Offshore Wind Projects</i> .....	1573
B. <i>The Air Over There: European Lessons in Facilitating Cooperative Federal–State Renewable Energy Policy Making</i> .	1575
1. The Federal Government .....	1575
2. The Wisconsin State Government .....	1578
V. WISCONSIN’S NEED FOR A MORE NOVEL EXPERIMENT: A CALL TO ENACT COMPREHENSIVE OFFSHORE WIND ENERGY LEGISLATION.....	1580

### I. INTRODUCTION

When Justice Louis Brandeis observed roughly seventy-five years ago that “a single courageous state may . . . serve as a laboratory” for “novel social and economic experiments,”<sup>1</sup> the main source of electricity in the United States was coal.<sup>2</sup> In its heyday, coal’s dirtier attributes were overlooked by energy consumers and policy makers, both of whom were more concerned and satisfied with the fossil fuel’s positive economic traits: abundant supply, low cost, and transportability.<sup>3</sup> Today, coal and other fossil fuels have fallen out of favor with the American public, which has increasingly demanded access to alternative energy sources that are not only economical but also environmentally friendly.<sup>4</sup>

Perhaps with Justice Brandeis’s refrain ringing in their ears, recently

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1. *New State Ice Co. v. Liebmann*, 285 U.S. 262, 311 (1932) (Brandeis, J., dissenting).

2. History of Energy in the United States: 1635–2000: Coal, U.S. Dep’t of Energy, Energy Information Administration, <http://www.eia.doe.gov/emeu/aer/eh/coal.html> (last visited June 27, 2010). Coal was the leading source of energy in this country from 1885 to 1951, when it was supplanted by crude oil and natural gas, and regained the top spot in the early 1980s. *Id.* Although coal is no longer used to heat our homes or power our ships and trains, today it primarily is used to generate electricity. *Id.* In fact, 92% of coal mined in the United States generates roughly half of the country’s electricity. *Id.*; see also Energy Sources: Coal, U.S. Dep’t of Energy, <http://www.energy.gov/energysources/coal.htm> (last visited June 27, 2010).

3. Melanie Warner, *Is America Ready to Quit Coal?*, N.Y. TIMES, Feb. 15, 2009, at BU1.

4. Energy Policy Has Initial Support; Impact on Jobs, Cost Looks Crucial, ABC News/Washington Post Poll, Aug. 28, 2009, <http://abcnews.go.com/images/PollingUnit/1093a4Energy.pdf> (noting that “[p]rice sensitivity” is “central to the debate” regarding the United States’ energy policy overhaul). Eighty-seven percent of respondents to a 2007 poll believed that “using renewable energy sources, like solar and wind power, to generate electricity is a good idea because they are readily available and better for the environment.” Americans’ Views on the Environment, CBS News/New York Times Poll, April 26, 2007, <http://www.cbsnews.com/htdocs/pdf/042607environment.pdf> [hereinafter Americans’ Views]. On the other hand, only 43% of survey participants thought continued use of coal as an energy source is prudent, compared to 48% who felt it is a “bad idea.” *Id.*

legislators in a majority of states have “courageous[ly]” responded to their constituencies with “novel . . . experiments” in alternative energy policy,<sup>5</sup> namely through renewable portfolio standards (RPSs).<sup>6</sup> In many states, RPS policies have been used to spur public and private development of land-based wind power generation facilities.<sup>7</sup> In fact, many states see wind power as an increasingly essential element in their energy portfolios.<sup>8</sup> That being said, while a few states have investigated the potential of offshore wind projects, or wind farms,<sup>9</sup> none have actually erected wind turbines in their waters.<sup>10</sup>

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5. *Liebmann*, 285 U.S. at 311. Among the experimental incentives state legislatures have used to entice private renewable energy development are “tax credits and exemptions, rebates, grants, loans, green-labeling requirements, green power purchasing programs, and tradable renewable certificates, in the form of green tags or renewable energy credits.” Carolyn S. Kaplan, *Congress, the Courts, and the Army Corps: Siting the First Offshore Wind Farm in the United States*, 31 B.C. ENVTL. AFF. L. REV. 177, 188 (2004).

6. Information Resources: States with Renewable Portfolio Standards, U.S. Dep’t of Energy, Office of Energy Efficiency and Renewable Energy, [http://apps1.eere.energy.gov/states/maps/renewable\\_portfolio\\_states.cfm](http://apps1.eere.energy.gov/states/maps/renewable_portfolio_states.cfm) [hereinafter States with Renewable Portfolio Standards] (last visited June 27, 2010). By January 2010, twenty-nine states and the District of Columbia had instituted RPS policies. LARRY FLOWERS, NAT’L RENEWABLE ENERGY LAB., WIND ENERGY UPDATE 21 (2010), [http://www.windpoweringamerica.gov/pdfs/wpa/wpa\\_update.pdf](http://www.windpoweringamerica.gov/pdfs/wpa/wpa_update.pdf). A relatively new concept, an RPS sets a deadline by which electricity retailers are required to purchase a minimum percentage of their power from renewable energy resources. States with Renewable Portfolio Standards, *supra*; see also Christopher E. Cotter, Comment, *Wind Power and the Renewable Portfolio Standard: An Ohio Analysis*, 32 DAYTON L. REV. 405, 423–26 (2007). Taken together, states with RPS policies account for more than half of the electricity sales in the United States. States with Renewable Portfolio Standards, *supra*. In addition, six more states—North Dakota, South Dakota, Utah, West Virginia, Virginia, and Vermont—have nonbinding goals for adoption of renewable energy. WIND ENERGY UPDATE, *supra*, at 21.

7. See Cotter, *supra* note 6, at 425–26. Although the efficacy of RPS policies has been debated, it is undisputed that they “provided the impetus behind 47% of new wind development in the United States” between 2001 and 2005. *Id.* at 426; see also Robert J. Michaels, *National Renewable Portfolio Standard: Smart Policy or Misguided Gesture?*, 29 ENERGY L.J. 79, 101–10 (2008) (concluding that the latter is true, citing California’s inability to enforce RPSs and the dearth of conclusive data regarding RPS compliance in states such as Texas, Pennsylvania, and Colorado as predictive of the likely inefficacy of a national standard).

8. See Kaplan, *supra* note 5, at 177–78.

9. The term “wind farm” is also commonly used to refer to wind projects. In this Comment, the author occasionally will use the terms interchangeably.

10. See Kaplan *supra* note 5, at 189–92. Press Release, Am. Wind Energy Ass’n, Statement by the American Wind Energy Association on the NYPA Fresh Water Offshore RFP (Dec. 2, 2009), [http://www.awea.org/newsroom/releases/12-2-09\\_NYPA\\_Fresh\\_Water\\_Offshore\\_RFP.html](http://www.awea.org/newsroom/releases/12-2-09_NYPA_Fresh_Water_Offshore_RFP.html) (commenting on the New York Power Authority’s request for proposals to construct wind farms generating up to 500 megawatts in Lakes Erie and Ontario) [hereinafter NYPA Fresh Water Offshore RFP]. The U.S.’s first offshore wind farm likely will begin construction in 2010 or 2011 and will be located approximately twelve miles off the coast of Delaware. Steve Gelsi, NRG Energy Sees Offshore Wind Revenue by 2014, MarketWatch (Nov. 10, 2009), <http://www.marketwatch.com/story/nrg-energy-eyes-offshore-wind-revenue-by-2014-2009-11-10>; Danielle Ulman, *Delaware PSC Approves Nation’s First Offshore Wind Farm*, DAILY RECORD (Balt.), Aug. 1, 2008, <http://mddailyrecord.com/2008/07/31/delaware-approves-nations-first-offshore-wind-farm/>; Danielle Ulman, *Rehoboth*

But in many places, the winds of change are blowing. No longer are the continental coasts seen as the only viable sites for offshore wind development.<sup>11</sup> Increasingly, energy policy makers are turning their attention to the Great Lakes.<sup>12</sup> On January 15, 2009, the Public Service Commission of Wisconsin (PSCW) released its final report of a yearlong study assessing the potential for offshore wind power generation in Lakes Michigan and Superior.<sup>13</sup> Despite much anticipation, the study's results were inconclusive, at best.

On one hand, the PSCW found that it is "technologically feasible" to generate electricity from wind turbines sited in the middle of Lake Michigan.<sup>14</sup> On the other hand, the report also conceded that there are a number of "significant technical, economic, environmental, and legal issues to resolve."<sup>15</sup> Because no entity has ever built an offshore wind farm in United

*Wind Farm Project Moves Closer with Delmarva Power Deal*, DAILY RECORD (Balt.), June 24, 2008, <http://mddailyrecord.com/2008/06/23/rehoboth-wind-farm-project-moves-closer-with-delmarva-power-deal/>. However, individuals involved with the Delaware project would be wise to heed the lessons of Cape Wind, which had long been expected to be the country's first offshore wind farm. Guy R. Martin & Odin A. Smith, *The World's Largest Wind Energy Facility in Nantucket Sound? Deficiencies in the Current Regulatory Process for Offshore Wind Energy Development*, 31 B.C. ENVTL. AFF. L. REV. 285, 286 (2004). Originally proposed in 2001, the Cape Wind project was supposed to begin delivering power to 500,000 customers living on Cape Cod and the islands of Nantucket Sound, Massachusetts, by 2005. *Id.*; Elizabeth A. Ransom, Note, *Wind Power Development on the United States Outer Continental Shelf: Balancing Efficient Development and Environmental Risks in the Shadow of the OCSLA*, 31 B.C. ENVTL. AFF. L. REV. 465, 468-69 (2004). Recently, Cape Wind's developers predicted they could begin construction of their 130-turbine wind farm in 2010, even though the project must overcome a number of remaining obstacles. *See infra* note 129.

11. Ransom, *supra* note 10, at 467, 468 n.20. Private developers are attracted by the Outer Continental Shelf's (OCS) "shallow waters and sustainable winds," both of which are ideal for profitable wind energy development. *Id.* at 467. By 2004, one company had proposed no less than "eighteen total projects in federal and state waters off the coast of Massachusetts, New York, Pennsylvania, Maryland, and Virginia," illustrating the OCS's popularity as a potential wind farm site. *Id.* at 468 n.20; *see also* Kaplan, *supra* note 5, at 190; Adam M. Dinnell & Adam J. Russ, *The Legal Hurdles to Developing Wind Power as an Alternative Energy Source in the United States: Creative and Comparative Solutions*, 27 NW. J. INT'L L. & BUS. 535, 544 (2007).

12. *See, e.g.*, NYPA Fresh Water Offshore RFP, *supra* note 10; Sean Ryan, *Wisconsin Tests Water for Wet Wind Farms*, DAILY REPORTER (Milwaukee, Wis.), Apr. 8, 2008, at 1A; Bob Matyi, *Ohio Commissioners Begin Study of Wind Farm to Be Developed in Lake Erie Near Cleveland*, GLOBAL POWER REP., Jan. 17, 2008, at 14.

13. Press Release, Pub. Serv. Comm'n of Wis., PSC Issues Final Report on Great Lakes Wind Energy Study (Jan. 15, 2009), [http://psc.wi.gov/pdf/files/News\\_Releases/2009/01\\_January\\_wowfinalreportrelease.pdf](http://psc.wi.gov/pdf/files/News_Releases/2009/01_January_wowfinalreportrelease.pdf).

14. STUDY GROUP, GOVERNOR'S TASK FORCE ON GLOBAL WARMING, PUB. SERV. COMM'N OF WIS., HARNESSING WISCONSIN'S ENERGY RESOURCES: AN INITIAL INVESTIGATION INTO GREAT LAKES WIND DEVELOPMENT 9 (2009), [http://psc.wi.gov/apps/erf\\_share/view/viewdoc.aspx?docid=106801](http://psc.wi.gov/apps/erf_share/view/viewdoc.aspx?docid=106801) [hereinafter HARNESSING WISCONSIN'S ENERGY RESOURCES].

15. *Id.*

States waters, let alone the Great Lakes, the several legal issues raised by the PSCW report are questions of first impression.

This Comment aims to address the PSCW's most significant legal concerns related to the development of offshore wind farms in Lakes Michigan and Superior, particularly whether and how the existing Wisconsin and federal regulatory schemes would accommodate offshore wind farm development.<sup>16</sup> Part II offers a general history and overview of wind projects, beginning in Part II.A with a glimpse at the well-established and successful European wind industry. This subpart also details two bold European policy initiatives: (1) the European Union's 2009 Renewable Energy Directive,<sup>17</sup> which established a comprehensive renewable energy regulatory system based on principles of extensive coordination and cooperation among various governmental entities, and (2) the United Kingdom's Planning Act 2008,<sup>18</sup> which considerably streamlined the permitting process for substantial national infrastructure projects such as large wind farms, but whose central permitting authority has been typecast as being undemocratic and authoritarian. Then, Part II.B highlights the upstart success of and growing support for land-based wind farms in the United States. This subpart concludes by pointing to the potential benefits and challenges presented by offshore wind projects this side of the Atlantic Ocean, drawing comparisons and contrasts between the two continents' systems.

Part III attempts to untangle the labyrinth of current federal and state regulations pertinent to offshore wind power development in Lakes Michigan and Superior. Part IV critically assesses the efficacy of this complex regulatory framework, in two steps. First, Part IV.A identifies opportunities for Wisconsin state legislators to directly address offshore wind energy in the Great Lakes while simplifying the state's current regulatory scheme. Next, against the backdrop of congressional debate on the nation's future energy policy, Part IV.B discusses opportunities for federal-state collaboration in efforts to develop the Great Lakes region's renewable energy industries, generally, and offshore wind, specifically. In an effort to provide policy makers with both fresh ideas and cautionary advice, Part IV also refers to European wind power policy successes and failures. Finally, Part V closes with an exhortation to the Wisconsin Legislature to enact exhaustive legislation that addresses the state's pressing energy concerns and lays the foundation for long-term economic security through fostering the well-ordered development of an offshore wind energy industry.

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16. *Id.* at 17–18.

17. Council Directive 2009/28/EC, On the Promotion of the Use of Energy from Renewable Sources, 2009 O.J. (L 140) 17 [hereinafter 2009 Renewable Energy Directive].

18. Planning Act, 2008, c. 29 (Eng.).

## II. AN AERIAL VIEW: THE HISTORY OF WIND POWER DEVELOPMENT

Harnessing the power of the wind is anything but a new concept. In fact, historical records show that humankind began using wind power as early as the third or second century B.C.E.<sup>19</sup> Windmills peppered the pastoral European landscape by the eleventh or twelfth century.<sup>20</sup>

Fast-forward nearly a millennium, and an entirely different scene comes into view. Modest wooden windmills used long ago to pump water or grind grain have been replaced by sleek steel and fiberglass structures that generate electricity.<sup>21</sup> Wind turbines, as they are now called, can be seen on both European lands and waters. Led by the pioneering efforts of Germany and Denmark, which installed the world's first offshore wind farm in 1991,<sup>22</sup> historically the European Union (EU) has set the pace for innovations in wind power development.<sup>23</sup> In 2009 alone, new installations in EU member nations accounted for more than 10.2 gigawatts (GW) of additional power-generating

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19. Iva Ziza, Note, *Siting of Renewable Energy Facilities and Adversarial Legalism: Lessons from Cape Cod*, 42 NEW ENG. L. REV. 591, 599 (2008).

20. *Id.*

21. Windmill World, History of Windmills, <http://www.windmillworld.com/windmills/history.htm> (last visited June 27, 2010); Am. Wind Energy Ass'n, Wind Web Tutorial: Wind Energy Basics, [http://www.awea.org/faq/wwt\\_basics.html](http://www.awea.org/faq/wwt_basics.html) [hereinafter Wind Energy Basics] (last visited June 27, 2010). Wind energy is generated when solar radiation heats different parts of the earth at different rates, creating variations in the atmosphere's temperature. Wind Energy Basics, *supra*. As hot air rises, atmospheric pressures at the earth's surface are reduced and cool air is drawn in to fill the void left by the escaping hot air, resulting in wind. *Id.* Wind turbines capture the kinetic energy of the wind, and the power systems to which the turbines are connected convert this captured wind energy into electrical energy that can be harnessed by utility companies for use in homes and businesses. *Id.* Although there are two basic designs of wind turbines—vertical-axis, or “egg-beater” style, and horizontal-axis, or propeller-style, machines—horizontal-axis wind turbines are more commonly erected for use as “utility-scale” turbines, which have a power-generation capacity of 100 kilowatts (kW) or more. *Id.* Most wind turbines currently on the market tout power ratings ranging from 250 watts to 5 megawatts (MW). *Id.* The steel and concrete towers for these turbines can range in height from 150 to 300 feet, and feature fiberglass-reinforced polyester or wood-epoxy rotors of roughly the same length. *Id.* Utility-scale wind turbines are most efficient when grouped together into wind farms generating at least 660 kW, and must be sited in locations featuring minimum wind speeds of 13 miles per hour. *Id.* Within the United States, the Great Plains has the potential to function as the mecca of wind farm development, boasting an abundance of sites in several states, including Texas, Iowa, Oklahoma, and North and South Dakota, featuring sustained wind speeds of at least 15 miles per hour. See U.S. Department of Energy, Wind Powering America, Wind Maps and Wind Resource Potential Estimates, [http://www.windpoweringamerica.gov/wind\\_maps.asp](http://www.windpoweringamerica.gov/wind_maps.asp) (last visited June 27, 2010); see also Joseph O. Wilson, Note, *The Answer, My Friends, Is in the Wind Rights Contract Act: Proposed Legislation Governing Wind Rights Contracts*, 89 IOWA L. REV. 1775, 1780–81 (2004).

22. See Kaplan, *supra* note 5, at 188; HARNESSING WISCONSIN'S ENERGY RESOURCES, *supra* note 14, at 193.

23. GLOBAL WIND ENERGY COUNCIL, GLOBAL WIND 2008 REPORT 30 (2009), [http://www.gwec.net/fileadmin/documents/Publications/Global\\_Wind\\_2008\\_Report.pdf](http://www.gwec.net/fileadmin/documents/Publications/Global_Wind_2008_Report.pdf).

capacity.<sup>24</sup> That year, the EU's cumulative wind power-generating capacity reached an all-time high of 74.8 GW, a nearly eight-fold increase from the year 2000.<sup>25</sup> According to the European Wind Energy Association, in 2009, wind projects represented more than 39% of all new power-generation installations in the EU.<sup>26</sup>

Recently, the popularity of wind power has expanded from Europe to countries all over the globe, including Australia, China, Egypt, India, and the United States.<sup>27</sup> Now, wind power is widely seen as the fastest-growing renewable energy resource in the world.<sup>28</sup> The industry's growth is largely attributable to the implementation of innovative renewable energy regulatory schemes throughout Europe, home to some of the most "aggressive government policies promoting green energy," including wind power.<sup>29</sup>

Some of these policies have been widely accepted, while others have been derided as undemocratic. The next section will discuss in turn the successes and failures of European wind power policy.

#### A. *The Bold Country: Europe's Wind Power Regulatory Scheme*

##### 1. Model Citizens: The European Union's Cooperative Approach

Over the past two decades, the "old country"—that is, the EU and its twenty-seven member nations—has boldly led the world in renewable energy policy making. As early as the 1980s, lawmakers in Denmark were proposing legislation to promote private investment in renewable energy industries.<sup>30</sup>

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24. EUROPEAN WIND ENERGY ASS'N, WIND IN POWER: 2009 EUROPEAN STATISTICS 8 fig.3.1 (2010), [http://www.ewea.org/fileadmin/ewea\\_documents/documents/statistics/general\\_stats\\_2009.pdf](http://www.ewea.org/fileadmin/ewea_documents/documents/statistics/general_stats_2009.pdf). One GW is the equivalent of 1,000 MW.

25. *Id.* at 9 fig.3.3.

26. *Id.* at 3, 6.

27. Dinnell & Russ, *supra* note 11, at 567, 575–78. Nevertheless, the 66 GW of wind power generated on the European continent in 2008 represented 55% of the global total—the twenty-seven EU member nations accounted for 65 GW of the continent's total wind power-generating capacity. GLOBAL WIND 2008 REPORT, *supra* note 23, at 13.

28. *See, e.g.*, Kaplan, *supra* note 5, at 178–79; Rusty Russell, *Neither Out Far Nor in Deep: The Prospects for Utility-Scale Wind Power in the Coastal Zone*, 31 B.C. ENVTL. AFF. L. REV. 221, 225 (2004). Global wind energy capacity nearly tripled in only four years, from 47,317 MW of capacity available at the end of 2004 to 120,798 MW in 2008. *Compare* Dinnell & Russ, *supra* note 11, at 565, with GLOBAL WIND 2008 REPORT, *supra* note 23, at 9 tbl.1. In slightly less time, global investment in wind energy more than tripled, from \$14 billion worth of installed facilities in 2005 to approximately \$50 billion worth of new generating equipment in 2008. *Compare* Dinnell & Russ, *supra* note 11, at 565, with GLOBAL WIND 2008 REPORT, *supra* note 23, at 3.

29. Kaplan, *supra* note 5, at 189; *see also* GLOBAL WIND 2008 REPORT, *supra* note 23, at 30.

30. EWEA Chief: EU Legislation Set to Boost Wind Industry (Euractiv.com), Jan. 21, 2009, <http://www.euractiv.com/en/energy/ewea-chief-eu-legislation-set-boost-wind-industry/article-178688> [hereinafter EWEA Chief] (interviewing a European wind power industry lobbyist who outlined the basic historical development of Europe's renewable energy industries).

The German and Spanish governments followed soon after.<sup>31</sup> By the new millennium, wind power and other renewable energy sources had garnered the support of the then-fifteen-member EU, which passed a Renewables Directive in 2001.<sup>32</sup> The legislation's stated goal was to increase the EU's percentage of electricity produced from renewable energy sources to 21% by 2010.<sup>33</sup> Although the Directive contained only voluntary, as opposed to mandatory, "national indicative targets,"<sup>34</sup> it served as the foundation for subsequent renewable energy production standards throughout the continent.<sup>35</sup>

The Renewables Directive also gave EU member nations the freedom to implement the "[s]upport schemes" or mechanisms of their choice to meet their renewable energy production targets.<sup>36</sup> Giving the EU member nations such ample discretion could have proven inefficient, or worse—particularly if a country chose to implement a strategy directly counter to the Directive's core policy goals. Such inefficiency can be demonstrated by an example taken from the early days of the 2001 Renewables Directive, when EU member nations still were learning how to overcome and dispense with administrative barriers within their own borders. Initially, before a wind farm project in Greece could have proceeded, it required approval from forty-one different organizations (including a television station), each of which had the power to veto the project.<sup>37</sup>

However, what resulted was a diverse mix of innovative regulatory schemes tailor-made for each nation's specific needs and market tolerances.<sup>38</sup>

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31. *Id.*

32. Council Directive 2001/77/EC, On the Promotion of Electricity Produced from Renewable Energy Sources in the Internal Electricity Market, 2001 O.J. (L 283) 33 [hereinafter 2001 Renewables Directive].

33. 2001 Renewables Directive, *supra* note 32, at 35. As enacted, the Directive originally required 22.1% of the EU's electricity to come from renewable energy sources. *Id.* But with the EU's expansion in 2004 from a fifteen-member body to a twenty-five-member organization, this goal was slightly revised down to 21%. See Council Decision, 2003 O.J. (L 236) 15–16 (EU) (admitting the Czech Republic, Estonia, Cyprus, Latvia, Lithuania, Hungary, Malta, Poland, Slovenia, and Slovakia into the EU on May 1, 2004); *The Share of Renewable Energy in the EU: Commission Report in Accordance with Article 3 of Directive 2001/77/EC, Evaluation of the Effect of Legislative Instruments and Other Community Policies on the Development of the Contribution of Renewable Energy Sources in the EU and Proposals for Concrete Actions*, at 11, COM (2004) 366 final (May 26, 2004).

34. 2001 Renewables Directive, *supra* note 32, at 35.

35. See EWEA Chief, *supra* note 30.

36. 2001 Renewables Directive, *supra* note 32, at 35–36.

37. EWEA Chief, *supra* note 30. Ostensibly, Greek officials have learned their lesson and long since centralized such veto power in only one or several governmental bodies.

38. See GLOBAL WIND 2008 REPORT, *supra* note 23, at 30; see also *Commission Staff Working Document on the Support of Electricity from Renewable Energy Sources: Accompanying Document to the Proposal for a Directive of the European Parliament and of the Council on the Promotion of the Use of Energy from Renewable Sources*, at 4–6, COM (2008) 19 final (Jan. 23, 2008) [hereinafter

Some countries employed price-based market instruments such as feed-in tariffs to help sustain renewable energy operations. Used in eighteen EU member nations, feed-in tariffs and premiums are regulated by the government and allocated to “operators of eligible domestic renewable electricity plants for the electricity they feed into the grid.”<sup>39</sup> The government pays all producers a fixed price per unit of electricity produced (the feed-in tariffs), but individual producers are given an incentive to produce additional electricity to earn competitively awarded premiums, or bonuses. By guaranteeing participating producers a tariff subsidy for a long-term period of ten to twenty years, the government can reassure skittish industry investors—that is, at least until the upstart renewable electricity market establishes itself.<sup>40</sup>

Other nations relied on quantity-based market instruments. Seven EU member nations employed quota obligations, usually in the form of tradable green certificates.<sup>41</sup> Under this system, governments obligate consumers, suppliers, or producers—subject to penalty—to obtain or produce a certain percentage of their electricity from renewable energy sources. Renewable electricity producers sell their electricity at market price, but also are allowed to sell green certificates authenticating the renewable source of their electricity. Suppliers can prove they have met their obligation by purchasing green certificates from renewable electricity producers.<sup>42</sup>

Thanks in large part to the Renewables Directive and led by the efforts of member nations such as Denmark, Germany, and Spain, in the first half of the last decade the EU cemented its status as the world leader in wind power development.<sup>43</sup> At one point, the EU could boast of a 32% average yearly increase in wind power-generating capacity, and 22% annual growth in terms of new wind farm installations.<sup>44</sup> But by 2007, the major barriers to industry growth that had long been present in most EU countries—project authorization delays and inequitable access to and slow integration with

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*Commission Staff Working Document*] (providing an overview of the “great range of market-based instruments governments use to subsidise renewable electricity”). Market-based instruments that provide operating (instead of investment) support for renewable electricity producers are either quantity-based (they fix a quantity of renewable electricity to be produced) or price-based (they fix a price to be paid for renewable electricity). *Commission Staff Working Document, supra*, at 4–5.

39. *Commission Staff Working Document, supra* note 38, at 5.

40. *Id.* Over the past five years, Portugal has put in place such a feed-in tariff program and revamped its national electricity grid to better accommodate renewable energy transmission, demonstrating the advantages and drawbacks of converting a country’s energy program from a fossil fuels-based system to one reliant on renewable energy sources such as wind and solar power. *See infra* Part IV.B.1.

41. *Commission Staff Working Document, supra* note 38, at 5.

42. *Id.*

43. GLOBAL WIND ENERGY COUNCIL, GLOBAL WIND 2005 REPORT 16 (2006), [http://www.gwec.net/uploads/media/Global\\_WindPower\\_05\\_Report.pdf](http://www.gwec.net/uploads/media/Global_WindPower_05_Report.pdf).

44. *Id.*

electric power grids—had begun to take their toll on even the EU’s leading wind power producers.<sup>45</sup> Dragged down by lackluster expansion in Portugal and Germany, the latter of which experienced a 25% drop-off in its rate of new wind power-generating capacity from 2006 to 2007, the EU’s annual market growth rate sagged to a respectable 12%.<sup>46</sup> Meanwhile, the global market expanded by 31%, led by remarkable growth in the United States.<sup>47</sup>

Enter the EU’s renewable energy and climate change package, or the “20 20 by 2020” plan.<sup>48</sup> Proposed by the European Commission in January 2008, the plan built upon the framework of prior policy statements and laid out both short- and long-term strategy for EU energy policy, including renewable energies.<sup>49</sup> Understanding the intricate relationship between the immediate need to check increases in greenhouse gas emissions and the enduring goal of creating sustainable economic growth, the Commission recognized a unique “opportunity” and proclaimed 2007 a “turning point for the European Union’s climate and energy policy.”<sup>50</sup> The Commission put forward a plan under which 20% of the EU’s energy consumption would be derived from renewable energy sources by 2020.<sup>51</sup> The “legally binding” plan would hold each of the EU’s member nations responsible for doing its part to help the group meet that target through implementing “national action plan[s]” that would outline each member nation’s agreed renewable energy consumption target and the measures to be used to reach that goal.<sup>52</sup> Notably, the proposal also contained measures that addressed the long-standing barriers to wind energy development,<sup>53</sup> including grid access issues.<sup>54</sup> After a few revisions, in

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45. GLOBAL WIND ENERGY COUNCIL, GLOBAL WIND 2007 REPORT 30–31 (2008), [http://www.gwec.net/fileadmin/documents/test2/gwec-08-update\\_FINAL.pdf](http://www.gwec.net/fileadmin/documents/test2/gwec-08-update_FINAL.pdf).

46. *Id.* at 7, 30.

47. *Id.* at 6, 30.

48. *Proposal for a Directive of the European Parliament and of the Council on the Promotion of the Use of Energy from Renewable Sources*, at 2, COM (2008) 19 final (Jan. 23, 2008) [hereinafter *Proposal for a Directive*]; *20 20 by 2020: Europe’s Climate Change Opportunity*, at 1, COM (2008) 30 final (Jan. 23, 2008) [hereinafter *20 20 by 2020*] (memorandum introducing the proposal and outlining two key goals: to reduce greenhouse gas emissions by 20% and achieve a 20% share of renewable energy consumption by the year 2020). Incidentally, the European Commission is the EU’s equivalent of the United States’ Executive branch, while the Parliament and Council are more akin to the Legislative branch’s House of Representatives and Senate, respectively. Europa: The EU at a Glance, How Are We Organised?, [http://europa.eu/abc/panorama/howorganised/index\\_en.htm](http://europa.eu/abc/panorama/howorganised/index_en.htm) (last visited June 27, 2010). Together, the European Parliament and Council share the responsibility of enacting EU legislation, or directives. *Id.*

49. *20 20 by 2020*, *supra* note 48, at 3–5. Another central component of the plan included a redesigned continental emissions trading system. *Id.* at 5–6.

50. *Id.* at 2; see also *Proposal for a Directive*, *supra* note 48, at 2.

51. *20 20 by 2020*, *supra* note 48, at 2.

52. *Id.* at 2, 7.

53. See *supra* note 45 and accompanying text.

54. *Proposal for a Directive*, *supra* note 48, at 31.

December 2008 government officials from EU member nations, the European Parliament, and the European Commission agreed to adopt the “landmark” plan.<sup>55</sup> The Renewable Energy Directive became law in April 2009, thus binding all EU countries to the 20 20 by 2020 plan’s renewable energy targets.<sup>56</sup>

## 2. A (Too) Simple Plan?: The United Kingdom’s Planning Act 2008

The EU’s Renewable Energy Directive appears to have spurred at least one of its member nations into action. Even as the 2008–09 economic recession retained its grip on global credit markets, including those relied on to finance wind power projects,<sup>57</sup> former British Prime Minister Gordon Brown announced an ambitious offshore wind power initiative and awarded contracts to companies that will construct thousands of wind turbines along 7,500 miles of British coastline.<sup>58</sup> The plan to construct nine offshore wind farms, which will generate up to 25 GW of power and cost an estimated \$120 billion to implement, is intended to help Britain satisfy its commitment under the Renewable Energy Directive to generate 15% of its energy from renewable sources by 2020.<sup>59</sup>

Although none will begin construction until 2014,<sup>60</sup> undoubtedly Brown had hoped that some of these offshore wind farms currently being planned would benefit from the United Kingdom’s Planning Act, indirectly inspired by the EU’s Renewable Energy Directive and passed into law in November 2008.<sup>61</sup> The Act consolidated the permitting process for “nationally

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55. Ian Traynor & Allegra Stratton, *Leaders Agree 20% 2020 Renewable Energy Target*, *GUARDIAN* (London), Dec. 10, 2008, at 25, available at <http://www.guardian.co.uk/environment/2008/dec/09/climatechange-energy>. Before the 20 20 by 2020 plan ultimately was adopted, disagreement over two contentious points jeopardized the legislation’s success. *Id.* While one group of nations insisted that biofuel energy sources comprise 10% of transportation fuel by 2020, Italy tried to slip in an escape clause that would have ordered a review of renewable energy progress in 2014 and allow any countries failing to make mandated progress to revise down its goals. *Id.* In the end, the 2014 review date was retained, but without any provision allowing for target revisions. *Id.* Most important, the renewable energy quotas also survived. *Id.*

56. 2009 Renewable Energy Directive, *supra* note 17, at arts. 3–4. For a detailed analysis of how the Renewable Energy Directive has affected wind energy development in Europe, see Tyler Hagenbuch, Note, *Establishing an Aggressive Legal Framework for the Future of Wind Energy in Europe*, 42 *VAND. J. TRANSNAT’L L.* 1595 (2009).

57. Lars Kroldrup, Wind Power in Europe Grows, but Credit Remains Tight, *Green Inc.*, <http://greeninc.blogs.nytimes.com/2010/02/03/wind-power-in-europe-grows-but-credit-remains-tight/> (Feb. 3, 2010, 10:15 EST).

58. Landon Thomas Jr. & Robert P. Walzer, *Thousands of Wind Turbines Coming to British Seas*, *N.Y. TIMES*, Jan. 9, 2010, at B4.

59. *Id.*

60. *Id.*

61. Planning Act, 2008, c. 29 (Eng.).

significant infrastructure project[s],” including offshore wind farms generating more than 100 MW of power.<sup>62</sup> Eliminating “eight bureaucratic regimes,” the Act replaced them with a single Infrastructure Planning Commission (IPC) that is independent of the U.K. government.<sup>63</sup> Despite its independence, the IPC is required by the Planning Act to issue permits to infrastructure projects that comport with “national policy statements” crafted by the secretary of state for communities and local government, and that are subsequently debated and approved by Parliament.<sup>64</sup> As conceived in the Act, these statements are to represent the U.K.’s “strategic blueprints for replacing [its] aging and overloaded infrastructure,” and are intended to “balance local concerns with the needs of the country.”<sup>65</sup> Only after providing several opportunities for “public consultation and special parliamentary scrutiny” may the IPC adopt and implement a national priority statement.<sup>66</sup> Working under the guidance of this framework, the IPC is tasked with assessing the social, economic, environmental, and technical merits of each project application, and is authorized to reject infrastructure projects that it considers falling short of the applicable national priority statement.<sup>67</sup> Notably, even before it accepts an application, the IPC requires a project developer to engage extensively with and receive approval from stakeholders of the community in which the developer proposes to build.<sup>68</sup>

Before the Planning Act existed, on average it took twenty-four months for a wind farm project to receive government permission to proceed.<sup>69</sup> Now, because government officials do not have to “reinvent[] the wheel” each time they are presented with a new project application,<sup>70</sup> industrial experts believe

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62. *Id.* §§ 14–15.

63. Hazel Blears, Building Up to Better Plans, Joe Public Blog, <http://www.guardian.co.uk/society/joepublic/2008/nov/05/planning-bill-blears> (Nov. 5, 2008, 12:11 GMT) [hereinafter Better Plans] (penned by the U.K.’s former secretary of state for communities and local government, who suggested that by creating “one streamlined system that can make fair decisions more quickly[, m]any wind farms will get faster approval. Overall the country could save up to [300 million pounds] a year.”); *see also* Planning Act sched. 1, § 21 (outlining status requirements of commissioners); IPC Commissioners’ Code of Conduct (Interim), <http://infrastructure.independent.gov.uk/wp-content/uploads/2009/09/Commissioners-Code-of-Conduct.pdf> (last visited June 27, 2010).

64. Better Plans, *supra* note 63; Planning Act § 5.

65. Better Plans, *supra* note 63; Planning Act § 5.

66. Better Plans, *supra* note 63; Planning Act §§ 5, 7.

67. Better Plans, *supra* note 63; Planning Act § 5; *see also* Infrastructure Planning Commission: Guide to Its Role and Operation 5–6, 10, 14 (2009), <http://infrastructure.independent.gov.uk/wp-content/uploads/2010/01/The-IPC-A-guide-to-its-Role-and-Operations.pdf>.

68. Infrastructure Planning Commission: Guide to Its Role and Operation, *supra* note 67, at 16–21.

69. GLOBAL WIND 2007 REPORT, *supra* note 45, at 63.

70. Siobhan Kennedy & Francis Elliott, *CBI Warns of Power Cuts if Planning Bill Is Defeated*,

that the Planning Act could provide for more efficient yet responsible permitting of wind farm projects in coming years, which they say is necessary if the U.K. is to meet its mandated renewable energy targets by 2020.<sup>71</sup>

That is, if the Planning Act and the IPC were to survive that long. Barely eight months after beginning operations and less than two months after a new British coalition government ousted Brown and his Labour Party from power,<sup>72</sup> the IPC was unceremoniously discarded, the news announced by a government press release.<sup>73</sup> On the same day the IPC was sidelined without its having reviewed even one project application, the U.K. government announced plans to temporarily shift major infrastructure planning decisions to government ministers and to eventually enact legislation to replace the Planning Act and formally close the IPC.<sup>74</sup> Meanwhile, the development of final national policy statements that were to be debated by Parliament in the spring of 2010 has been indefinitely postponed.<sup>75</sup>

Before it was effectively terminated, the IPC had long been a target of Tory leaders who “[saw] the IPC as anti-democratic and an arm of the state, created to minimise dissent [regarding major public infrastructure projects] and ride roughshod over public opinion.”<sup>76</sup> Editorialists in at least one leading British newspaper echoed these sentiments, derogatorily referring to the IPC as merely another quasi-nongovernmental organization, or quango, that is “excessively bureaucratic, authoritarian, unaccountable and staffed by people who are paid too much and often demonstrate a woeful lack of competence.”<sup>77</sup>

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TIMES (London), June 24, 2008, at 15, available at <http://www.timesonline.co.uk/tol/news/politics/article4200817.ece>.

71. Nick Clark, “*Lights Will Go Out*” by 2015 if [House of] Lords Rejects Planning Bill, INDEPENDENT (London), July 14, 2008, at 38, available at <http://www.independent.co.uk/news/business/news/lights-will-go-out-by-2015-if-lords-rejects-planning-bill-866957.html> (quoting deputy director of a leading U.K. business trade lobby who maintained that “[t]o keep the lights on, heat our homes and meet climate change targets, approximately [£100 billion] needs to be invested in major energy infrastructure projects by 2020”).

72. Infrastructure Planning Commission, Message from the Chair, [http://infrastructure.independent.gov.uk/?page\\_id=8](http://infrastructure.independent.gov.uk/?page_id=8) (last visited June 27, 2010); John F. Burns, *Tories in Britain Reclaim Power with a Coalition*, N.Y. TIMES, May 12, 2010, at A1.

73. Press Release, Planning Quango Closes, U.K. Dep’t for Communities and Local Gov’t (June 29, 2010), <http://www.communities.gov.uk/newsstories/newsroom/1626268>.

74. Press Release, Major Infrastructure Stays on Fast-Track as Planning Quango Closes, U.K. Dep’t for Communities and Local Gov’t (June 29, 2010), <http://www.communities.gov.uk/news/corporate/1626220>.

75. Robin Pagnamenta, *Nice Offices, Lavish Pay and Lots of Staff but Quango Is Still Waiting to Start Work*, TIMES (London), Jan. 28, 2010, at 26, available at <http://www.timesonline.co.uk/tol/news/politics/article7005417.ece>; Major Infrastructure Stays on Fast-Track as Planning Quango Closes, *supra* note 74.

76. Peter Hetherington, *Power Struggles*, GUARDIAN (London), July 15, 2009, at 1, available at <http://www.guardian.co.uk/society/2009/jul/15/quango-fast-tracks-controversial-projects>.

77. Editorial, *Another Quango for the Bonfire*, SUNDAY TELEGRAPH (London), Nov. 1, 2009,

The IPC's abrupt exit may have been undeserved, especially considering that the Commission was never given a true opportunity to demonstrate its ability to genuinely involve local stakeholders in infrastructure project planning. To that end, the IPC episode could be instructive for U.S. policy makers contemplating whether and how to reform Wisconsin and federal regulatory schemes to streamline project permitting processes and encourage offshore wind farm development.<sup>78</sup>

### B. Wind Power Development in the United States

#### 1. Rookie Success: Boom Times for Land-Based Wind Projects

In this century, the U.S. has been at the forefront of global wind power development. The country's wind power industry installed more than a quarter of the world's new wind energy-generating capacity in 2007 and grew at an average rate of 29% from 2002 to 2007.<sup>79</sup> Shortly after the U.S. wind industry surpassed the 20,000-MW installed-capacity milestone in 2008,<sup>80</sup> as expected it supplanted Germany as the world leader in terms of total installed capacity.<sup>81</sup> Today, the total installed capacity in the U.S. tops 35,000 MW.<sup>82</sup>

According to the American Wind Energy Association, "strong demand [and] favorable economics" have been largely responsible for the U.S. wind power industry's "remarkable and accelerating growth."<sup>83</sup> Among the states, Texas leads the way with 9,410 MW of installed capacity.<sup>84</sup> In Texas, twenty

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at 25, available at <http://www.telegraph.co.uk/comment/telegraph-view/6475363/The-Infrastructure-Planning-Commission-another-quango-for-the-bonfire.html>.

78. See *infra* Part IV.A.

79. Am. Wind Energy Ass'n, Wind Energy Fast Facts (2007), [http://awea.org/newsroom/pdf/Fast\\_Facts.pdf](http://awea.org/newsroom/pdf/Fast_Facts.pdf); GLOBAL WIND 2007 REPORT, *supra* note 45, at 8, 10.

80. Press Release, Am. Wind Energy Ass'n, U.S. Wind Energy Installations Surpass 20,000 Megawatts (Sept. 3, 2008), [http://www.awea.org/newsroom/releases/Wind\\_Installations\\_Surpass\\_20K\\_MW\\_03Sept08.html](http://www.awea.org/newsroom/releases/Wind_Installations_Surpass_20K_MW_03Sept08.html) (noting that 20,000 MW, or 20 billion watts, is enough power to supply 5.3 million households).

81. Press Release, Am. Wind Energy Ass'n, American Wind Energy Association Notes Top Wind Industry Accomplishments of 2008 (Dec. 22, 2008), [http://awea.org/newsroom/releases/Year\\_End\\_Wrap\\_Up\\_22Dec08.html](http://awea.org/newsroom/releases/Year_End_Wrap_Up_22Dec08.html); GLOBAL WIND 2007 REPORT, *supra* note 45, at 8.

82. AM. WIND ENERGY ASS'N, AWEA YEAR END 2009 MARKET REPORT 2 (2010), <http://www.awea.org/publications/reports/4Q09.pdf>. Amazingly, the U.S. wind industry has tripled in size in only three years. *Id.* For comparison's sake, it had taken two decades for the industry to reach the 10,000 MW mark in 2006. U.S. Wind Energy Installations Surpass 20,000 Megawatts, *supra* note 80.

83. GLOBAL WIND 2007 REPORT, *supra* note 45, at 6.

84. Am. Wind Energy Ass'n, U.S. Wind Energy Projects: Texas, <http://awea.org/projects/Projects.aspx?s=Texas> (last visited June 27, 2010). With respect to wind power, the timeworn adage that everything's bigger in Texas rings true. The Lone Star State is home to the world's two largest wind farm installations, the Roscoe Wind Complex, which is spread over 100,000 acres and features 627 wind turbines generating up to 781.5 MW, and the Horse Hollow Wind Energy Center, which boasts 421 wind turbines spread across 47,000 acres and a total generating capacity of 735.5 MW. World's Largest Wind Farm Churns in Texas, CBSNews.com

new wind farms comprised of nearly 1,400 turbines came online in the year 2009 alone.<sup>85</sup> Trailing Texas in wind power development are Iowa and California, with 3,670 MW and 2,794 MW of total generation capacity, respectively, and eleven more states each generating more than 1,000 MW of wind power.<sup>86</sup>

If only 2.1% of its contiguous “windy land area” were dedicated to wind power development, the U.S. would have the ability to supply enough power to meet 20% of the country’s current electricity consumption.<sup>87</sup> Interestingly, the U.S. Department of Energy does not consider “water features” to be ideal for wind power development,<sup>88</sup> lending credence to the notion that the “potential for extensive wind energy development and production . . . remains largely untapped.”<sup>89</sup>

## 2. In Too Deep?: Venturing Into the Unfamiliar Territory of Offshore Wind Farms

Currently, wind projects are relied on to supply merely 1.9% of the electricity consumed in the U.S., even though realistically wind energy could satisfy up to 20% of the country’s electricity demand.<sup>90</sup> Wind power has yet to

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(Oct. 2, 2009), <http://www.cbsnews.com/stories/2009/10/02/tech/livinggreen/main5358287.shtml>; NextEra Energy Resources, Horse Hollow Wind Energy Center, [www.nexteraenergyresources.com/content/where/portfolio/pdf/horsehollow.pdf](http://www.nexteraenergyresources.com/content/where/portfolio/pdf/horsehollow.pdf) (last visited June 27, 2010).

85. U.S. Wind Energy Projects: Texas, *supra* note 84.

86. AWEA YEAR END 2009 MARKET REPORT, *supra* note 82, at 4. Those states are Washington (1,980 MW), Minnesota (1,809 MW), Oregon (1,758 MW), Illinois (1,547 MW), New York (1,274 MW), Colorado (1,246 MW), North Dakota (1,203 MW), Oklahoma (1,130 MW), Wyoming (1,101 MW), Indiana (1,036 MW), and Kansas (1,014 MW). *Id.* Incidentally, Wisconsin ranks seventeenth nationwide in terms of wind power-generation capacity, with 449 MW. *Id.*

87. *Compare* U.S. Energy Information Administration: Independent Statistics and Analysis, Electricity Explained: Data & Statistics, [http://tonto.eia.doe.gov/energyexplained/index.cfm?page=electricity\\_home#tab2](http://tonto.eia.doe.gov/energyexplained/index.cfm?page=electricity_home#tab2) (last visited June 27, 2010) (noting that U.S. electricity consumption in 2008 equaled 3,906,443 GWh), *with* U.S. Department of Energy, Wind Powering America, Estimates of Windy Land Area and Wind Energy Potential (Feb. 4, 2010), [http://www.windpoweringamerica.gov/docs/wind\\_potential\\_80m\\_30percent.xlsx](http://www.windpoweringamerica.gov/docs/wind_potential_80m_30percent.xlsx) (reporting a wind energy-generation potential of 36,919,551 GWh on 26.89% of the country’s “windy land area,” which consists of the most suitable areas for wind power development within the contiguous forty-eight states, excluding locations deemed unsuitable for development, such as wilderness areas, parks, urban areas, and wetlands).

88. Estimates of Windy Land Area and Wind Energy Potential, *supra* note 87.

89. Dinnell & Russ, *supra* note 11, at 542.

90. *See* U.S. Department of Energy, Wind Powering America, Wind Powering America Update (Feb. 18, 2010), [http://www.windpoweringamerica.gov/filter\\_detail.asp?itemid=746](http://www.windpoweringamerica.gov/filter_detail.asp?itemid=746); U.S. DEP’T OF ENERGY, 20% WIND ENERGY BY 2030: INCREASING WIND ENERGY’S CONTRIBUTION TO U.S. ELECTRICITY SUPPLY 1–2 (2008), <http://www1.eere.energy.gov/windandhydro/pdfs/41869.pdf> [hereinafter 20% WIND ENERGY BY 2030].

be entirely exploited because of a “complex interplay of factors”<sup>91</sup> running the gamut from the practical (capital investment costs)<sup>92</sup> to the environmental (effects on bats and migratory wildlife)<sup>93</sup> to the personal (noise and visual aesthetics) impact of wind farms.<sup>94</sup> These obstacles have proven particularly crippling to the offshore wind farm sector, which has yet to get off the ground in the U.S.,<sup>95</sup> despite a host of latent advantages over land-based wind projects.

*a. Potential Benefits*

Many of the United States’ windiest sites—and thus, most ideal locations for wind turbines—are found in the Great Plains states or other western parts of the country.<sup>96</sup> However, because these sites generally are located in remote areas that lack ready access to power transmission lines, high costs are required to transport the energy generated by remotely located wind turbines to load centers near populous regions.<sup>97</sup>

Discussions regarding siting of offshore wind farms generally focus on the East and West coasts, home to “more than half of the U.S. population.”<sup>98</sup> But according to the U.S. Census, 34 million people reside in the Great Lakes Basin, including more than 10 million people who make their homes in the five states bordering Lakes Michigan and Superior.<sup>99</sup> Unlike remotely located land-based facilities that must transfer power across hundreds of miles of plains, large-scale wind farms that likely would be located anywhere from five to twenty miles off the shores of Lakes Michigan and Superior have great potential to serve as regional load centers.<sup>100</sup> The PSCW study group found that “Wisconsin’s existing transmission system along Lake Michigan could support the development of off-shore wind projects smaller than 600 MW [if] located near a city[,] without substantial upgrades to the transmission system.”<sup>101</sup>

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91. ROBERT Y REDLINGER ET AL., *WIND ENERGY IN THE 21ST CENTURY*, at xiii (2002).

92. An initial hurdle to wind farm projects is the high cost of constructing miles of transmission lines from the wind farm sites themselves, many of which are located in remote areas of the Great Plains, to load centers near populous areas. See Kaplan, *supra* note 5, at 190.

93. See generally Cotter, *supra* note 6, at 420–21.

94. See generally *id.* at 417–20 (internal citations omitted).

95. See *supra* note 10 and accompanying text.

96. See Wind Maps and Wind Resource Potential Estimates, *supra* note 21.

97. See Kaplan, *supra* note 5, at 190.

98. *Id.*

99. Great Lakes Information Network, People in the Great Lakes Region: Populations of the Great Lakes Basin (2000–2001), <http://www.great-lakes.net/envt/flora-fauna/people.html> (last visited June 27, 2010). Population figures for the entire Great Lakes Basin are based on 2000 U.S. Census data, and include an estimate of 10 million Canadians residing in an undetermined number of provinces in the region. *Id.*

100. See HARNESSING WISCONSIN’S ENERGY RESOURCES, *supra* note 14, at 13–14.

101. *Id.* at 12.

As mentioned earlier, offshore wind power offers a clean, sustainable alternative to fossil fuel sources of electricity.<sup>102</sup> And while much attention should be given to offshore wind power's ability to generate renewable energy, policy makers would be wise not to ignore the potential to use offshore wind farms to generate jobs, as well. Land-based wind projects have been shown to create jobs in the U.S., generally, and in Wisconsin, specifically.<sup>103</sup> The U.S. wind power industry reportedly created 35,000 jobs in 2008 alone, increasing the total number of people employed in the industry to 85,000.<sup>104</sup> If the offshore wind industry takes root in the Great Lakes region, Wisconsin potentially could enjoy "new and increased manufacturing and export opportunities" in the wind power components industry as well as the shipbuilding industry.<sup>105</sup> Reports commonly identify Wisconsin as one of a handful of states well positioned to experience job growth in the wind power industry, in large part because of the state's "manufacturing infrastructure, skilled workforce, and academic support community."<sup>106</sup> One such report by the U.S. Department of Energy forecast a hypothetical scenario in which the United States would derive 20% of its electricity from wind power in 2030.<sup>107</sup> Upon compiling a list and map of existing U.S. industries "that make some of the 8,000 components and piece parts . . . used to construct a typical wind turbine," the Energy Department concluded that Wisconsin was "one of the ten states that would benefit most in terms of job growth."<sup>108</sup>

Already, Wisconsin's manufacturing workers are benefiting from expanded opportunities, courtesy of recent announcements that two wind turbine component manufacturers are constructing new manufacturing facilities in Wisconsin. First, on February 5, 2010, a central Wisconsin manufacturer of complex composite structures, vessels, and processing systems for clean technology applications announced that it would break ground in March 2010 on a 535,000-square-foot wind-turbine blade plant expected to employ 600 workers.<sup>109</sup> Less than two weeks later, a Spanish company caused a stir when it

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102. See discussion *supra* Part II.

103. HARNESSING WISCONSIN'S ENERGY RESOURCES, *supra* note 14, at 171–72.

104. Press Release, Am. Wind Energy Ass'n, U.S. Wind Energy Industry Welcomes Second Round of Renewable Energy Grants from Depts. of Treasury, Energy (Sept. 22, 2009), [http://www.awea.org/newsroom/releases/Wind\\_Energy\\_Industry\\_Welcomes\\_Second\\_Round\\_of\\_Renewable\\_Energy\\_Grants\\_092209.html](http://www.awea.org/newsroom/releases/Wind_Energy_Industry_Welcomes_Second_Round_of_Renewable_Energy_Grants_092209.html).

105. HARNESSING WISCONSIN'S ENERGY RESOURCES, *supra* note 14, at 172.

106. *Id.*

107. *Id.*; 20% WIND ENERGY BY 2030, *supra* note 90, at 7–8.

108. HARNESSING WISCONSIN'S ENERGY RESOURCES, *supra* note 14, at 172; 20% WIND ENERGY BY 2030, *supra* note 90, at 208.

109. Nathaniel Shuda, *Wind-Energy Plans Move Ahead*, DAILY TRIBUNE (Wisconsin Rapids, Wis.), Feb. 6, 2010, at 1, available at <http://www.wisconsinrapidtribune.com/article/20100206/WRT0101/2060643/Wind-energy-plans-move-ahead>.

selected Milwaukee as the location over nearly eighty other cities for its new wind-turbine generator manufacturing facility, expected to begin construction in April 2010 and employ 275 workers by 2015.<sup>110</sup>

But the potential economic benefits of offshore wind power extend far beyond the manufacturing employment marketplace. Offshore wind project development in the Great Lakes also could create “new jobs in construction and installation near project locations” and, as has taken place in Europe, could help boost the economies of marine industry-based port cities such as Sheboygan and Green Bay.<sup>111</sup> In addition, there is much potential to create well-paying jobs in supporting sectors, such as tourism, “engineering, construction, transportation, and financial services.”<sup>112</sup>

Another benefit of offshore wind farms is that the winds they harness typically are “stronger and less turbulent than land-based winds,” increasing their revenue-generating potential.<sup>113</sup> Although an offshore location presents additional construction and maintenance costs,<sup>114</sup> such costs can be offset by consistent energy production resulting from predictable wind conditions.<sup>115</sup> The winds likely to be produced off the Wisconsin shores of Lakes Michigan and Superior range from 16 to 20 miles per hour, wind speeds that are more than ample to support a utility-scale wind farm.<sup>116</sup>

Predictable wind conditions over water offer an ancillary benefit: reduced wind shear, which results in less wear and tear to turbine components.<sup>117</sup> Therefore, offshore wind farms can be designed to last for fifty years, instead of the “twenty to twenty-five years typical for land-based installations.”<sup>118</sup> In

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110. Larry Sandler, *Energy Firm Picks Milwaukee for Plant*, MILWAUKEE J. SENTINEL, Feb. 16, 2010, at 1A; Thomas Content & Tom Daykin, *Electric Motor Expertise Sold Spanish Firm on Milwaukee*, MILWAUKEE J. SENTINEL, Feb. 17, 2010, at 1A.

111. HARNESSING WISCONSIN’S ENERGY RESOURCES, *supra* note 14, at 172.

112. *Id.*; see also Nathaniel Shuda, *Energy Composites Project Expected to Be “Incredible Boost,”* DAILY TRIBUNE (Wisconsin Rapids, Wis.), Feb. 9, 2010, at 3, available at <http://www.wisconsinrapidtribune.com/apps/pbcs.dll/article?AID=20102090623> (predicting that the “residual effects” of construction of a 535,000-square-foot wind-turbine blade manufacturing plant in Wisconsin Rapids will benefit local real estate agents, building contractors, financial advisers, and retailers).

113. Kaplan, *supra* note 5, at 191.

114. HARNESSING WISCONSIN’S ENERGY RESOURCES, *supra* note 14, at 13–14.

115. Kaplan, *supra* note 5, at 191.

116. See *supra* note 21; HARNESSING WISCONSIN’S ENERGY RESOURCES, *supra* note 14, at 55. Because there are only two buoys in Lake Michigan, both of which are located in the “middle of the lake rather than closer to shore where wind energy projects might be built” and “measure wind speeds at heights much lower than wind turbines,” the PSCW study group declined to make definitive assertions as to wind speeds over the lake’s waters. HARNESSING WISCONSIN’S ENERGY RESOURCES, *supra* note 14, at 54. Therefore, the wind speed ranges cited are “assumed mean wind speeds for . . . a typical wind turbine height of 90 meters.” *Id.*

117. Kaplan, *supra* note 5, at 191.

118. *Id.*

exchange for submitting to higher upfront costs, investors in offshore wind projects can take advantage of longer amortization periods.<sup>119</sup>

The simple fact that offshore wind projects are located on water instead of land introduces several advantages. First, because offshore wind turbines can be and are often larger than land-based turbines,<sup>120</sup> they “have the potential to produce power on a larger scale, and thus may be more economical.”<sup>121</sup> Moreover, offshore wind farms “can be built near population centers without facing the [land use] problems commonly associated with close proximity to homes and other buildings.”<sup>122</sup> Last but certainly not least, wind turbines that are situated far enough offshore are unlikely to provoke complaints regarding aesthetic concerns.<sup>123</sup>

### *b. Controversies and Challenges*

#### *i. A Cautionary Tale: The Cape Wind Project*

With respect to offshore wind farms, aesthetics are no insignificant matter. They are believed to be the primary reason behind the near-death (several times over) of what long ago was widely expected be the nation’s first offshore wind project.<sup>124</sup> The now-infamous Cape Wind saga has been mired in nearly a decade of pitched battle, as played out in the courts and the press.<sup>125</sup> Local residents and government officials have repeatedly challenged the federal government’s authority to permit a private energy company to construct a 130-turbine wind farm off the coast of Massachusetts in the waters of Nantucket Sound<sup>126</sup>—but only five miles from the town of Hyannis on Cape Cod, home to the Kennedy family compound.<sup>127</sup> Several Native

119. *Id.*

120. HARNESSING WISCONSIN’S ENERGY RESOURCES, *supra* note 14, at 35–37.

121. *Id.* at 8.

122. Dinnell & Russ, *supra* note 11, at 544.

123. *See id.* at 544.

124. *See* Kaplan, *supra* note 5, at 203–05 & n.162.

125. Katharine Q. Seelye, *Big Wind Farm Off Cape Cod Gets Approval*, N.Y. TIMES, Apr. 29, 2010, at A1.

126. Kaplan, *supra* note 5, at 197.

127. *Id.* at 192. Jay Wickersham, *Sacred Landscapes and Profane Structures: How Offshore Wind Power Challenges the Environmental Impact Review Process*, 31 B.C. ENVTL. AFF. L. REV. 325, 329 (2004) (quoting a letter written by former Sen. Edward Kennedy (D-Mass.) to a Cape Cod newspaper, in which he said that “although the project needed to receive enough state and federal scrutiny to justify its going forward, . . . so far . . . [it] hasn’t met that test, and I doubt they ever will”) (citation omitted); *Ocean Wind Farm Advances*, MILWAUKEE J. SENTINEL, Jan. 17, 2009, at 3A (noting that “Kennedy, whose family’s Hyannis Port compound would have a clear view of the [wind] farm, has tried to derail the project in Congress, citing . . . the sanctuary of Nantucket Sound”). Despite the various reasons given, at the end of the day Senator Kennedy had what some commentators undoubtedly would refer to as a bad case of NIMBY (Not in My Back Yard) syndrome, or NIMBYism. *See* Lisa A. Kelley, Comment, *The Power of the Sea: Using Ocean Energy to Meet Florida’s Need for Power*, 37 ENVTL. L. 489, 512–13 (referring to the Cape Wind project, among

American tribes were among the most recent opponents of the Cape Wind project, claiming the wind turbines would obstruct their ocean view during sunrise greeting ceremonies.<sup>128</sup> Nevertheless, in April 2010 the federal government at long last “gave the green light” to the Cape Wind project, which is expected to help jumpstart the United States’ burgeoning offshore wind industry.<sup>129</sup>

ii. Other Potential Concerns

Wisconsin has its share of Not in My Back Yard, or NIMBY, detractors,<sup>130</sup> although perhaps they are not quite as vehement as the Cape Wind opponents. But in addition to facing aesthetic concerns, wind farm proponents need to be prepared to gather sufficient information before addressing the public’s questions regarding offshore wind farms’ impact on the environment, human activities, cost and technological capabilities, and the local and regional economy.

Offshore wind projects’ potential impact on Great Lakes “wildlife and aquatic life, including migratory birds, bats, and fisheries,” is undoubtedly of “primary concern[]” to many Wisconsin residents.<sup>131</sup> Although “many species of migratory birds and bats are known to follow the Great Lakes during peak migration periods,” less is known about their specific patterns of movement near or over the Great Lakes, and whether such flight patterns would come close to or interact with offshore wind turbines.<sup>132</sup> Similarly, until a wind farm is sited and underwater transmission lines are laid on the lakebeds, it is

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others).

128. Editorial, *Winds of Change: Interior Secretary Ken Salazar Can Give Greener Energy a Needed Push Off Cape Cod*, WASH. POST, Feb. 5, 2010, at A18.

129. Seelye, *supra* note 125.

130. See Ryan, *supra* note 12, at 1A; Kari Lydersen, *Wisconsin Feels Turbulence Over Pulling Power from Air; State Finds More Opposition Than Expected to Wind Turbines*, WASH. POST, Apr. 12, 2008, at A2; see generally John S. Hingtgen, *Offshore Wind Farms in the Western Great Lakes: An Interdisciplinary Analysis of Their Potential* (2003) (unpublished M.S. thesis, University of Wisconsin-Madison), [www.mrec.org/Wind\\_Energy/Hingtgen%20Wind%20Thesis%2004.pdf](http://www.mrec.org/Wind_Energy/Hingtgen%20Wind%20Thesis%2004.pdf) (surveying residents of lakeshore counties and finding that they generally prefer onshore to offshore wind farms).

However, given several recent environmental scares significantly impacting essential U.S. water bodies, including Lake Michigan and the Gulf of Mexico, Wisconsin residents could be forgiven for being particularly protective of their Great Lakes. See Dan Egan, *Asian Carp Discovered: No Plan to Close Locks Despite Discovery Near Lake Michigan*, MILWAUKEE J. SENTINEL, June 24, 2010, at 1A; Emma Graves Fitzsimmons, *Michigan Governor Warns of Spill Threat*, N.Y. TIMES, July 29, 2010, at A13 (reporting an 800,000-gallon oil spill into the Kalamazoo River, a major waterway that feeds Lake Michigan); Justin Gillis, *U.S. Report Says Oil that Remains Is Scant New Risk*, N.Y. TIMES, Aug. 4, 2010, at A1 (estimating that through July 2010, 4.9 million barrels of oil had spilled from a seafloor well into the Gulf of Mexico following the Deepwater Horizon oil rig explosion on April 20, making it the largest marine oil spill disaster in history).

131. HARNESSING WISCONSIN’S ENERGY RESOURCES, *supra* note 14, at 15.

132. *Id.*

difficult to determine the “effects of off-shore wind turbines on fisheries and aquatic life.”<sup>133</sup> In some circumstances, “wind turbine structures could be designed to enhance habitat for some fish species,”<sup>134</sup> similar to manmade sunken coral reefs used in other parts of the world. Other factors that will need to be considered include the “location of sensitive habitat such as spawning reefs, lake currents, aquatic invasive species, contaminated sediments, submerged logs, electromagnetic fields, noise, as well as the potential for spills of hazardous materials.”<sup>135</sup>

Offshore wind projects also could impact “Great Lakes cultural and historic sites, commercial and recreational fishing, commercial and recreational navigation, air traffic, and communications.”<sup>136</sup> The negative impact of such projects could be minimized through careful site selection so as to avoid disturbing “prehistoric and historic communities along the margins of the Great Lakes, . . . historically significant shipwrecks,” or areas of “religious and historical” significance to the region’s Native American communities.<sup>137</sup> Moreover, project site studies should endeavor to protect the economic interests of commercial, tribal, and recreational fisheries in Lakes Michigan and Superior, currently valued at more than \$1 billion.<sup>138</sup> Efforts also should be made to reduce interference with the Great Lakes’ transportation and communications infrastructure, including air traffic, recreational boating, navigation channels used by the Army Corps of Engineers, and “various electronic signals and modes of communication, including radar and ship-to-ship communications.”<sup>139</sup>

Because an offshore wind project has yet to be constructed in the U.S.,<sup>140</sup> at present there are only estimates of the cost to design, build, and operate an offshore wind farm in the Great Lakes. Although most of the offshore projects that have been built in Europe are smaller than 100 MW, many insights can be gained by referring to these examples.

Factors that may increase the cost of offshore wind power relative to other sources include worldwide demand for wind turbine components and materials, which has “driven up prices by as much as 85% since 2002.”<sup>141</sup> Second, construction costs for offshore wind turbines likely will be higher than for comparable land-based facilities, especially given the challenges of

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133. *Id.*

134. *Id.*

135. *Id.* at 15–16.

136. *Id.* at 16.

137. *Id.*

138. *Id.* at 17.

139. *Id.*

140. *See supra* note 10 and accompanying text.

141. HARNESSING WISCONSIN’S ENERGY RESOURCES, *supra* note 14, at 13.

placing turbine foundations in lake waters as deep as 150 feet.<sup>142</sup> Finally, “operations and maintenance costs for offshore wind turbines at European installations are higher than [those at] comparable land-based installations.”<sup>143</sup> These added costs stem from the need for specialized personnel, vessels, and equipment that may not be available in the U.S. or are in high demand worldwide, as well as the additional time required for crews to reach offshore project sites and the increased premium costs to insure against the additional hazards presented by operating offshore.<sup>144</sup>

Likely adding to the cost of an offshore wind project is the need to develop a new or enhance the Great Lakes’ existing transmission infrastructure, comprised of both onshore and offshore facilities, to transport the power generated by the wind turbines to nearby energy markets.<sup>145</sup> At most European installations, “offshore turbines are connected by underwater cables to an offshore collector substation, which increases the voltage prior to sending electricity to shore.”<sup>146</sup> Transmission voltage requirements depend on a wind project’s size, the distance between the substation and shore, and the voltage of the connecting transmission system.<sup>147</sup> Sometimes, one or more offshore substations are needed, and their components usually need to be mounted above the water’s surface on a foundation similar to the type used to support turbines.<sup>148</sup> Offshore substations would need to be connected to the onshore transmission grid via one or more medium, high, or extra-high voltage cables, depending on the amount of power generated by the turbines.<sup>149</sup> These cables either could be buried in the lakebed or placed directly on the bottom of Lakes Michigan and Superior.<sup>150</sup>

While “Wisconsin’s existing transmission system along Lake Michigan could support the development of off-shore wind projects smaller than 600 MW [if] located near a city[,] without substantial upgrades to the transmission system,”<sup>151</sup> projects of a larger scale likely would “require more substantial upgrades to the existing transmission system, including the develop[ment] of new transmission lines.”<sup>152</sup> This is one leading reason why “Wisconsin’s transmission needs should be viewed in the context of larger

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142. *See generally id.* at 25–35, 39–41.

143. *Id.* at 13.

144. *Id.*

145. *Id.* at 12.

146. *Id.*

147. *Id.*

148. *Id.*

149. *Id.*

150. *Id.*

151. *Id.*

152. *Id.*

regional plans and trends,” such as the possible “transmission of wind-generated power from the Great Plains to the eastern United States [and] the adoption of Renewable Portfolio Standards by other states,”<sup>153</sup> should Wisconsin position itself to sell excess electricity to out-of-state customers.

Finally, as the global economy struggles to pull itself out of a sustained recession, some policy makers may be curious to learn just how investing in the development of a utility-scale wind power project currently could make financial sense. On the one hand, 2009 was a “banner year” for the entire U.S. wind power industry, and industry observers predict significant growth throughout this decade, particularly for offshore wind, both here and abroad.<sup>154</sup> On the other hand, that growth is not expected in the U.S. until at least 2014.<sup>155</sup> Moreover, much of the development experienced recently was attributable to either the federal government’s stimulus package,<sup>156</sup> which bailed out the wind power industry with a tax credit extension and other investment incentives, or to wind turbine orders placed in early 2008, before the economic crisis slowed manufacturing to a crawl.<sup>157</sup> All things considered, wind power proponents are less concerned with a potential lack of public support than they are with a lack of political support for renewable energy policies that encourage private investment in wind power development.<sup>158</sup>

Therefore, for the long term the most critical questions may be (1) whether companies interested in making wind power a central component of their renewable energy portfolios can afford to wait out the credit crunch, and (2) whether state and federal government policy makers will create regulatory environments conducive for such companies to invest in wind power when they are finally well positioned to do so.

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153. *Id.*

154. Jad Mouawad, *Wind Power Grows 39% for the Year*, N.Y. TIMES, Jan. 26, 2010, at B1; Sindya N. Bhanoo, Report Predicts Offshore Wind Boom, Green Inc., <http://greeninc.blogs.nytimes.com/2009/12/31/report-predicts-offshore-wind-boom/> (Dec. 31, 2009, 15:15 GMT).

155. Bhanoo, *supra* note 154.

156. American Recovery and Reinvestment Act of 2009, Pub. L. No. 111-5, 123 Stat. 115.

157. Mouawad, *supra* note 154.

158. *See id.*

### III. NEITHER TOO HOT NOR TOO COLD, BUT FAR FROM JUST RIGHT: THE CURRENT REGULATORY CLIMATE FOR OFFSHORE WIND DEVELOPMENT

#### A. Federal Regulatory Authority

##### 1. The Permitting Process

Although a number of federal laws possibly would be implicated by offshore wind development,<sup>159</sup> three statutes deserve special attention because they directly inform the permitting process for construction and construction-related activities in the Great Lakes: the Rivers and Harbors Appropriation Act of 1899 (RHA),<sup>160</sup> the Federal Water Pollution Control Act Amendments of 1972, commonly known as the Clean Water Act (CWA),<sup>161</sup> and the National Environmental Policy Act of 1969 (NEPA).<sup>162</sup> Congress may have had different intentions when enacting each of these statutes,<sup>163</sup> but today all three laws are central to the everyday regulatory work of one federal agency, the United States Army Corps of Engineers (the Corps).

With respect to the nation's waters, the Corps's original directive was to regulate navigation.<sup>164</sup> However, with the advent of the modern environmental regulatory system in the late 1960s and early '70s, Congress entrusted the Corps with the added responsibility of "public interest review," a balanced consideration of a given action's favorable and detrimental impacts,

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159. These statutes concern environmental quality (Comprehensive Environmental Response, Compensation, and Liability Act, 42 U.S.C. §§ 9601–9675 (2006), and Resource Conservation and Recovery Act, 42 U.S.C. §§ 6901–7000 (2006)), fish and wildlife (Fish and Wildlife Coordination Act, 16 U.S.C. §§ 661–667e (2006), Endangered Species Act, 16 U.S.C. §§ 1531–1599 (2006), Migratory Bird Treaty Act of 1918, 16 U.S.C. §§ 703–712 (2006), Bald Eagle Protection Act, 16 U.S.C. § 668 (2006)), coastal management and historic preservation (Coastal Zone Management Act, 16 U.S.C. §§ 1451–1466 (2006), and National Historic Preservation Act, 16 U.S.C. § 470 (2006)), national defense (*see, e.g.*, 33 U.S.C. § 1226 (2006), regarding United States Coast Guard safety and security zones in United States waters such as the Great Lakes, where navigation and other activities may be restricted), and interstate commerce (*see, e.g.*, Jones Act, 46 U.S.C. §§ 55102–55111 (2006), which addresses "coastwise trade").

160. Rivers and Harbors Appropriations Act of 1899 § 10, 33 U.S.C. § 403 (2006).

161. Clean Water Act Amendments of 1972 § 101–607, 33 U.S.C. § 1251–1387 (2006).

162. National Environmental Policy Act of 1969 § 101–102, 42 U.S.C. § 4331–4332 (2006).

163. While the RHA's goal is to protect navigation on "navigable . . . waters of the United States," the CWA is a water quality and pollution control statute, focused on "restor[ing] and maintain[ing] the chemical, physical, and biological integrity of the Nation's waters." 33 U.S.C. §§ 403, 1251. Comparatively speaking, NEPA has a much broader scope, represented by its "'twin aims' . . . to place upon [federal] agencies 'the obligation to consider every significant aspect of the environmental impact of a proposed [federal] action,' and to 'ensure that the [responsible] agency will inform the public that it has indeed considered environmental concerns in its decisionmaking process.'" *Hoosier Env'tl. Council, Inc. v. U.S. Army Corps of Eng'rs*, 105 F. Supp. 2d 953, 966 (S.D. Ind. 2000) (quoting *Baltimore Gas & Elec. Co. v. Natural Res. Def. Council*, 462 U.S. 87, 97 (1983) (internal citation omitted)).

164. 33 C.F.R. § 320.1(a) (2009).

undertaken on the public's behalf.<sup>165</sup> The Corps weighs these factors before issuing permits that would allow certain types of activities occurring in waters under its jurisdiction.<sup>166</sup> Within the Corps, thirty-six district engineers and eleven division engineers administer the regulatory program in accordance with procedures described in the Corps's regulations.<sup>167</sup> A district engineer has the jurisdictional authority to grant or deny permits, although the engineer's decisions are subject to administrative appeal, and eventually, judicial review.<sup>168</sup> In evaluating permit proposals, the Corps strives to avoid inundating applicants with bureaucratic heavy-handedness,<sup>169</sup> thereby favoring "general permits, joint processing procedures, interagency review, coordination, and authority transfers (where authorized by law) to reduce duplication."<sup>170</sup>

*a. Rivers and Harbors Appropriations Act*

Section 10 of the RHA gives the Corps broad authority to authorize the construction of any structure that may obstruct any "navigable . . . water[s] of the United States," including the Great Lakes.<sup>171</sup> Because Congress originally intended the RHA to help alleviate congestion on the country's waterways and thereby enhance interstate commerce,<sup>172</sup> section 10 regulates structures typically seen in rivers, canals, ports, and harbors, including wharfs, piers, bulkheads, and jetties.<sup>173</sup> However, section 10 also gives the Corps jurisdiction to regulate construction of "power transmission line[s]" and "permanently moored floating vessel[s],"<sup>174</sup> both of which are necessary for offshore wind development.<sup>175</sup>

Notably, while the Code of Federal Regulations prescribes specific

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165. *Id.*

166. *Id.* § 320.1(b).

167. 33 C.F.R. pts. 325, 330 (2009). The sections of Lakes Michigan and Superior bordering Wisconsin's shores fall within the jurisdiction of the Corps's Detroit district office. U.S. Army Corps of Engineers Detroit District Organization, <http://www.lre.usace.army.mil/who/organization/> (last visited June 27, 2010).

168. 33 C.F.R. § 320.1(a)(2); *see also* 33 C.F.R. pt. 331 (2009).

169. *See* 33 C.F.R. § 320.1(a)(3)–(5) (noting that in "seek[ing] to avoid unnecessary regulatory controls," the Corps endeavors to make "timely decision[s]" and eliminate "unnecessary paperwork and delays" whenever possible).

170. *Id.* § 320.1(a)(5).

171. 33 U.S.C. § 403 (2006).

172. *Minnehaha Creek Watershed Dist. v. Hoffman*, 449 F. Supp. 876, 884 (D. Minn. 1978), *aff'd in part, rev'd in part on other grounds*, 597 F.2d 617 (8th Cir. 1979) (noting the "clear . . . intent and purpose of [the RHA] was to insure free navigability of interstate commerce through federal regulation of the subject waterbodies").

173. 33 U.S.C. § 403.

174. 33 C.F.R. § 322.2(b) (2009).

175. *HARNESSING WISCONSIN'S ENERGY RESOURCES*, *supra* note 14, at 39, 61.

standards for aerial “power transmission lines crossing navigable waters,”<sup>176</sup> it contains only general regulations for all other types of power lines crossing navigable waters, presumably including the type of submerged power lines that would transmit electricity from offshore wind turbines and transformers to land-based collector systems.<sup>177</sup> Similarly, the Code very specifically restricts the anchoring of permanently or temporarily moored floating vessels associated with oil rigs located in the Gulf of Mexico,<sup>178</sup> but it is silent as to other moored floating vessels, including those used to facilitate offshore wind turbine construction.<sup>179</sup>

*b. Clean Water Act*

While section 10 of the RHA gives the Corps discretion to permit the excavation from or deposit of material into any U.S. lake,<sup>180</sup> the Corps generally regulates such activity using its authority under section 404 of the CWA to “issue permits . . . for the discharge of dredged or fill material into . . . navigable waters.”<sup>181</sup> Unlike the Corps’s section 10 authority, this power is subject to veto by the Environmental Protection Agency.<sup>182</sup>

Before deciding whether to grant a section 404 permit, the Corps conducts a public interest review and evaluates the proposed activity’s “probable impacts, including cumulative impacts, . . . on the public interest.”<sup>183</sup> The proposed activity’s reasonably expected benefits are weighed against its reasonably foreseeable detriments.<sup>184</sup> During this balancing analysis, the Corps may evaluate as many as twenty-one factors,<sup>185</sup> placing varying weight on each factor as appropriate for the particular proposal.<sup>186</sup>

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176. 33 C.F.R. § 322.5(i)(2).

177. HARNESSING WISCONSIN’S ENERGY RESOURCES, *supra* note 14, at 61–63.

178. 33 C.F.R. § 322.5(l).

179. HARNESSING WISCONSIN’S ENERGY RESOURCES, *supra* note 14, at 39–43.

180. 33 U.S.C. § 403 (2006).

181. 33 U.S.C. § 1344 (2006); *see also* 33 C.F.R. pt. 323 (2009). This statute is commonly implicated when parties challenge the Corps’s authority to deny permit applications to dredge or fill wetlands areas. *See, e.g.,* Rapanos v. United States, 547 U.S. 715 (2006).

182. 33 U.S.C. § 1344(c); *see also* James City County, Va. v. E.P.A., 12 F.3d 1330, 1336 (4th Cir. 1993); 40 C.F.R. § 230.10 (2009).

183. 33 C.F.R. § 320.4(a)(1) (2009).

184. *Id.*

185. *Id.* The possibly relevant factors that must be included in any cumulative impact analysis are “conservation, economics, aesthetics, general environmental concerns, wetlands, historic properties, fish and wildlife values, flood hazards, floodplain values, land use, navigation, shore erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food and fiber production, mineral needs, considerations of property ownership and, in general, the needs and welfare of the people.” *Id.* That being said, it is not difficult to see why it is essential for the Corps to seek input from its peer federal agencies, many of which are qualified to provide specific expertise in these areas. *See infra* notes 199 and 205 and accompanying text.

186. 33 C.F.R. § 320.4(a)(1).

Because Lakes Michigan and Superior are “waters . . . presently used . . . to transport interstate . . . commerce shoreward,” the Corps has sovereign jurisdiction over permits for discharges of dredged or fill material within the lakes.<sup>187</sup> The Corps can prohibit virtually any non-agricultural-related discharge of dredged material,<sup>188</sup> other than “incidental fallback,”<sup>189</sup> that has more than a *de minimis* effect on the Great Lakes.<sup>190</sup> As for the discharge of fill material, the Corps can restrict

without limitation, the following activities: Placement of fill that is necessary for the *construction of any structure or infrastructure* in a water of the United States; the building of any structure, infrastructure, or impoundment requiring rock, sand, dirt, or other material for its construction; . . . *fill for structures . . . associated with power plants and subaqueous utility lines.*<sup>191</sup>

Section 404’s provisions likely would directly impact an offshore wind project because many of the turbine assemblies currently available on the market are supported by foundations that rest on lakebeds or seabeds.<sup>192</sup> In fact, the construction of most turbine foundations requires both the displacement of existing lake or seabed material and the addition of new fill material.<sup>193</sup> Section 404 also would be triggered if the power lines required to transmit electricity from offshore turbines and substations to onshore collector systems were buried in the lakebed.<sup>194</sup>

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187. *Id.* § 323.5 (2009). Section 404(h) of the CWA allows the EPA to transfer to states the administration of section 404 permits for dredging and discharges in “waters of the United States,” provided the affected waters are not involved in interstate commerce and the states’ programs pass muster with federal regulators. *Id.*

188. *See id.* § 323.4 (2009).

189. *Id.* § 323.2(d)(2)(iii) (2009). The Corps once defined “incidental fallback” as the “redeposit of small volumes of dredged material that is incidental to excavation activities in waters of the United States when such material falls back to substantially the same place as the initial removal,” for example, when “dirt is shoveled and the back-spill that comes off a bucket . . . falls into substantially the same place from which it was removed.” 33 C.F.R. § 323.2(d)(2)(ii) (2008). However, this definition was removed after federal courts ruled that the regulation of incidental fallback was beyond the Corps’s jurisdiction. *See Revisions to the Clean Water Act Regulatory Definition of “Discharge of Dredged Material” and Final Rule*, 73 Fed. Reg. 79,641, 79,643–45 (Dec. 30, 2008). Now, whether incidental fallback constitutes discharge of dredged material, thus giving the Corps regulatory jurisdiction, is determined on a case-by-case basis. *Id.* at 79,643.

190. 33 C.F.R. § 323.2(d)(5).

191. *Id.* § 323.2(f) (emphasis added).

192. HARNESSING WISCONSIN’S ENERGY RESOURCES, *supra* note 14, at 25–31.

193. *Id.*

194. *Id.* at 63.

*c. National Environmental Policy Act*

NEPA's "'twin aims' are to place upon [federal] agencies 'the obligation to consider every significant aspect of the environmental impact of a proposed [federal] action,' and to 'ensure that the [responsible] agency will inform the public that it has indeed considered environmental concerns in its decision-making process.'"<sup>195</sup> Therefore, before the Corps may issue permits under either section 10 of the RHA or section 404 of the CWA, it must "take a hard look at [the] environmental consequences" of the proposed activity, a process that includes "undertaking [a] public interest review and consideration of alternatives."<sup>196</sup> The Corps formally evaluates these factors in an environmental assessment (EA).<sup>197</sup>

The first but oftentimes most critical step in the Corps's environmental review process, an EA is a "concise public document that . . . briefly provide[s] sufficient evidence and analysis" to help the Corps determine whether it must conduct a more detailed environmental review or simply issue a Finding of No Significant Impact, or a FONSI.<sup>198</sup> Nevertheless, an EA must be detailed insofar as it incorporates brief discussions of (1) the need for the proposed activity, (2) any alternatives, (3) the proposed activity's environmental impacts, and (4) a listing of agencies and persons consulted by the Corps.<sup>199</sup>

In the Seventh Circuit, the Corps's issuance of RHA or CWA permits normally would require only an EA.<sup>200</sup> However, the Code of Federal Regulations states that this is the case for most, but not necessarily all, permits issued by the Corps,<sup>201</sup> implying that some permitted activities under the Corps's purview mandate a lengthier environmental review process. In fact, in some jurisdictions the Corps's issuance of RHA or CWA permits always would constitute a "major federal action[] significantly affecting the quality of the human environment" because the permit issuance itself is the key factor determining whether a particular project moves forward.<sup>202</sup> Therefore, in such

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195. *Hoosier Envtl. Council, Inc. v. U.S. Army Corps of Eng'rs*, 105 F. Supp. 2d 953, 966 (S.D. Ind. 2000) (quoting *Baltimore Gas & Elec. Co. v. Natural Res. Def. Council*, 462 U.S. 87, 97 (1983) (internal citation omitted)); *see* 42 U.S.C. § 4332(2)(C) (2006).

196. *Hoosier Envtl. Council*, 105 F. Supp. 2d at 967 (internal quotation omitted); *see also* 40 C.F.R. §§ 1500.2, 1507.1 (2009).

197. 40 C.F.R. § 1508.9 (2009).

198. *Id.* §§ 1508.9(a), 1508.13; *see also infra* notes 203–04 and accompanying text.

199. 40 C.F.R. § 1508.9(b).

200. 33 C.F.R. § 230.7(a) (2009); *see also Hoosier Envtl. Council*, 105 F. Supp. 2d at 970.

201. 33 C.F.R. § 230.7(a) (2009).

202. National Environmental Policy Act of 1969 § 102(2)(C), 42 U.S.C. § 4332(2)(C) (2006); *Hoosier Envtl. Council*, 105 F. Supp. 2d at 970. *But see* *Sierra Club v. Morton*, 514 F.2d 856, 875 (D.C. Cir. 1975) (finding that "federal action within the meaning of the [NEPA] statute includes not only action undertaken by the agency itself, but also any action permitted or approved by the

jurisdictions, the agency would have to compose what has become known as an environmental impact statement (EIS).<sup>203</sup> An EIS is a detailed document that assesses the appropriateness of the proposed federal action prior to its implementation, focusing on (1) its environmental impact, (2) any unavoidable adverse environmental effects, (3) alternative plans, (4) the “relationship between local short-term uses of [the human] environment and the maintenance and enhancement of long-term productivity,” and (5) any irreversible resource commitments.<sup>204</sup> As is the case with an EA, when preparing an EIS a federal agency is expected to consult with and garner the input of any other federal agencies with concurrent jurisdiction conferred either “by law or special expertise.”<sup>205</sup>

Because offshore wind projects in Lakes Michigan or Superior likely would require the Corps to issue either section 10 or section 404 permits, or both,<sup>206</sup> the agency would need to “take a hard look at [the] environmental consequences” of offshore wind farms in the Great Lakes and prepare an EA, at the least.<sup>207</sup> Nevertheless, if the agency desired to preempt a potential administrative appeal and, eventually, judicial review initiated by an interested party and based on NEPA grounds,<sup>208</sup> the Corps could expend the extra time and expense of preparing an EIS before issuing any section 10 or section 404 permits.<sup>209</sup>

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agency”), *rev'd on other grounds sub nom.* *Kleppe v. Sierra Club*, 427 U.S. 390 (1976); *Sierra Club v. Morton*, 400 F. Supp. 610, 644–45 (N.D. Cal. 1975) (holding that “[t]he issuance of . . . a Section . . . 10 permit pursuant to the Rivers and Harbors Act of 1899 *always constitutes major federal action* and unless the Corps of Engineers . . . makes the negative determination that the issuance has no significant effect on the environment, an EIS is required. . . . It is irrelevant that the project may be neither federally financed nor constructed under the auspices of a federal agency. The key factor is that without federal approval . . . the project could not commence, and thus the federal action (i.e., issuing the permit) has as much effect on the environment as federal funding would have.”) (emphasis added), *aff'd in part, rev'd in part on other grounds sub nom.* *Sierra Club v. Andrus*, 610 F.2d 581 (9th Cir. 1979), *rev'd on other grounds sub nom.* *California v. Sierra Club*, 451 U.S. 287 (1981), *vacated on other grounds sub nom.* *Sierra Club v. Watt*, 451 U.S. 965 (1981).

203. 40 C.F.R. § 1508.11 (2009).

204. 42 U.S.C. § 4332(2)(C).

205. *Id.*; see also *supra* notes 170 and 199 and accompanying text.

206. See *supra* Part III.A.1.a–b.

207. *Hoosier Env'tl. Council*, 105 F. Supp. 2d at 966 (internal quotation omitted); see also 40 C.F.R. §§ 1500.2, 1507.1 (2009).

208. 33 C.F.R. § 320.1(a)(2) (2009); see also 33 C.F.R. pt. 331; *Hoosier Env'tl. Council*, 105 F. Supp. 2d at 961–64.

209. This is no insignificant consideration. According to an environmental scientist and leading NEPA expert who served on a White House task force charged with reinventing the legendary statute, there are vast differences in the cost and length of EAs and EISs. August Compliance Solutions, Inc., Resume of Charles H. Eccleston, <http://www.acs-saves.com/CHE%20Resume.htm> (last visited June 27, 2010); CHARLES H. ECCLESTON, NEPA AND ENVIRONMENTAL PLANNING: TOOLS, TECHNIQUES, AND APPROACHES FOR PRACTITIONERS 6–7 (2008). Reportedly,

## 2. Renewable Energy Policy

Citing its desire to both enhance interstate commerce and protect the environment,<sup>210</sup> Congress has seen fit to heavily regulate construction and construction-related activities in United States waters, including the Great Lakes.<sup>211</sup> In this respect, the states have made the choice to follow the national government's lead, arguably for the betterment of all society.<sup>212</sup>

That being said, federal lawmakers' unwavering commitment to enhance interstate commerce and protect the environment is certainly commendable. However, by the same token Congress' reticence to advance these goals in the arena of renewable energies has elicited a range of responses, from puzzlement<sup>213</sup> to exasperation.<sup>214</sup> Regrettably, Congress has "no comprehensive long term strategy" for renewable energies, and "[a]s a result, federal policy on wind power must be pieced together from a series of largely disconnected

[s]mall EAs typically are developed by one author, take from 2 weeks to 2 months to complete, vary from 10 to 30 pages in length, and cost between \$5000 and \$20,000.

. . . Large EAs typically are developed by an interdisciplinary team, take from 9 to 18 months to complete, vary from 50 to more than 200 pages in length, and cost between \$50,000 and \$200,000.

In contrast, EISs typically are developed by an interdisciplinary team, take from 1–2 years (sometimes more than 5 years) to complete, vary from 200 to more than 2000 pages in length, and cost between \$250,000 and \$2,000,000.

*Id.*

210. *See supra* note 163.

211. *See supra* Part III.A.1.

212. *See generally* Clifford Rechtschaffen, *Enforcing the Clean Water Act in the Twenty-First Century: Harnessing the Power of the Public Spotlight*, 55 ALA. L. REV. 775, 775–76 (2004) (lamenting the CWA's historically lackluster enforcement provisions, but praising its ability to introduce "impressive improvements in water quality over the past thirty years").

213. *See* Mona Hymel, *The United States' Experience with Energy-Based Tax Incentives: The Evidence Supporting Tax Incentives for Renewable Energy*, 38 LOY. U. CHI. L.J. 43, 78 (2006). Hymel noted that

[d]espite rhetoric claiming a commitment to the development and implementation of alternative and renewable energy and to overcoming our devastating oil habit, the numbers tell the truth: to date, Americans have only dabbled in alternatives. . . . [P]olicy makers, hampered by politics, are slow in formulating a long-range plan for dealing with fossil fuel dependence through tax policy or elsewhere.

*Id.*

214. *See* 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, 147 (2008) (decrying the "vacuum of federal leadership on renewable portfolio standards" and noting that "[g]iven such obvious and overwhelming advantages, it is hard to believe that many utilities and policymakers diligently oppose a federal RPS mandate, repeating myths that have long since been debunked").

federal actions.”<sup>215</sup>

In the summer of 2010, congressional leaders abandoned the most promising opportunity in recent history to deliver a comprehensive legislative solution to the country’s piecemeal energy strategy. A year after the House of Representatives passed its version of a broad climate change bill, efforts to advance similar legislation in the Senate “collapsed.”<sup>216</sup> Despite early sustained cooperation from notable members of both political parties, in the end Democratic Senate leaders conceded that they did not have sufficient political support to enact a sweeping overhaul of federal energy policy that had promised to “reduce greenhouse gas emissions, reduce dependence on foreign oil and create millions of clean-energy jobs.”<sup>217</sup>

Thus, Congress continues to hang its hat on the production tax credit (PTC), a credit given to renewable energy producers that is currently valued at approximately 2.1 cents per kWh, adjusted for inflation.<sup>218</sup> The PTC has been credited with spurring much of wind energy’s development over the past two decades, and it is still seen as “an essential step to level the playing field with conventional [energy] sources.”<sup>219</sup> However, the PTC has experienced “boom-and-bust cycle[s]” as it has faced the constant danger of extinction.<sup>220</sup> Most recently, Congress included within the stimulus package a provision extending the credit until January 1, 2013.<sup>221</sup> Nevertheless, this minor congressional action has not precluded states from carrying the burden in encouraging expansion of innovative alternative energy industries.

### B. Wisconsin Regulatory Authority

#### 1. The Permitting Process

Offshore wind projects in the Great Lakes would have to pass through a complicated review process, mandated by state laws regulating public utility

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215. Ronald H. Rosenberg, *Diversifying America’s Energy Future: The Future of Renewable Wind Power*, 26 VA. ENVTL. L.J. 505, 532 (2008).

216. Carl Hulse & David M. Herszenhorn, *Democrats Call Off Effort for Climate Bill in Senate*, N.Y. TIMES, July 23, 2010, at A15; see also John M. Broder, *Graham Pulls Support for Senate Climate Bill*, N.Y. TIMES, Apr. 25, 2010, at 19.

217. John M. Broder, *Graham Calls for “Pause” in Pursuing Energy Bill*, N.Y. Times on the Web (May 8, 2010), <http://www.nytimes.com/2010/05/08/us/politics/08climate.html>; Hulse & Herszenhorn, *supra* note 216; see also Broder, *supra* note 216.

218. 26 U.S.C. § 45 (2006).

219. Marilyn A. Brown & Sharon (Jess) Chandler, *Governing Confusion: How Statutes, Fiscal Policy, and Regulations Impede Clean Energy Technologies*, 19 STAN. L. & POL’Y REV. 472, 486–87 (2008); Barry Rabe, *Race to the Top: The Expanding Role of U.S. State Renewable Portfolio Standards*, SUSTAINABLE DEV. L. & POL’Y, Spring 2007, at 10, 15–16 (2007).

220. See Brown & Chandler, *supra* note 219, at 486–87; Rabe, *supra* note 219, at 15–16.

221. American Recovery and Reinvestment Act of 2009, Pub. L. No. 111-5, § 1101, 123 Stat. 115, 319.

activities, as well as laws that restrict activities in state waters. Under these laws, several state agencies have overlapping permit jurisdiction, particularly the Public Service Commission of Wisconsin (PSCW) and the Wisconsin Department of Natural Resources (WDNR).<sup>222</sup>

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222. For example, utility facilities, regardless of their location, subject to PSCW approval under Wisconsin Statutes section 196.49 or section 196.491 also may require WDNR approval under section 30.025 if their construction includes activities that require a permit, contract, or approval under Wisconsin Statutes chapter 30. Section 30.025 requires pre-application notification, establishes a joint PSCW–WDNR application process, ensures WDNR participation in the PSCW decision making, and requires WDNR to consider the issuance of PSCW approval as a consideration of practicable alternatives. WDNR is required to issue the necessary chapter 30 permits if it finds that the proposed facility complies with state and federal environmental standards and that the proposed facilities do not unduly affect (1) the public’s rights and interests in navigable waterways, (2) the effective flood flow of a stream, (3) the rights of other riparian owners, or (4) water quality.

*a. Public Utilities Statutes*

In general, the PSCW has primary jurisdiction for reviewing and approving electricity generation and transmission facilities in Wisconsin, including wind projects that would be located in the Great Lakes.<sup>223</sup> Guided by a principle of making energy-related decisions that are “cost-effective, technically feasible and environmentally sound,” the PSCW has two basic options: to issue either a construction authorization under Wisconsin Statutes section 196.49(3) or a certificate of public convenience and necessity under section 196.491(3).<sup>224</sup>

Under section 196.49(3), the PSCW may issue a construction authorization if it determines that the proposed project is in the public interest.<sup>225</sup> But the PSCW may refuse to issue a construction authorization if a project (1) substantially impairs the efficiency of the public utility, (2) provides facilities unreasonably in excess of probable future requirements, or (3) adds to the cost of service without proportionately increasing the value or availability of service.

Smaller electricity generation or transmission projects may require a construction authorization from the PSCW if they are proposed by a public utility and the project surpasses the cost thresholds established under Wisconsin Administrative Code section PSC 112.05(3)(a).<sup>226</sup> However, an entity other than a public utility proposing to build a wind project on the Great Lakes with a capacity of less than 100 MW would not require PSCW approval prior to construction.

Large projects, those defined as facilities with a power-generating

223. WIS. STAT. §§ 196.49(3), 196.491(3) (2007–2008). Electric generation and transmission facilities may be constructed by public utilities that meet any of the definitions outlined in § 196.01(5)(a). However, entities other than public utilities also may construct electric-generation facilities that are defined as wholesale merchant plants in § 196.491(1)(w).

224. *Id.* §§ 196.025(ar), 196.49(3), 196.491(3); *see also id.* § 1.12(4) (outlining the state’s energy policy and priorities).

225. *Id.* § 196.49(3)(a).

226. WIS. ADMIN. CODE PSC § 112.05(3)(a) (2008) provides that

[c]ost thresholds for projects requiring commission review and approval under this section are as follows:

1. If the applicant electric utility’s prior year electric operating revenues are less than \$5,000,000, any project whose estimated gross cost exceeds \$100,000.
2. If the applicant electric utility’s prior year electric operating revenues are between \$5,000,000 and \$250,000,000, any project whose estimated gross cost exceeds 2 percent of these revenues.
3. If the applicant electric utility’s prior year electric operating revenues are more than \$250,000,000, any project whose estimated gross cost exceeds \$5,000,000.

*Id.*

capacity of 100 MW or greater or transmission lines longer than one mile that are operated at 100 kilovolts (kV) or higher, generally require a certificate of public convenience and necessity from the PSCW. Projects that require a certificate of public convenience and necessity must satisfy a higher standard of review than projects requiring only a construction authorization.

The PSCW may issue a certificate of public convenience and necessity only if it determines that the proposed project meets the criteria established in Wisconsin Statutes section 196.491(3). There are some differences in the procedures for reviewing wholesale merchant plants,<sup>227</sup> but generally the project must (1) meet the criteria for the issuance of a construction authorization under section 196.49(3); (2) satisfy the reasonable needs of the public for an adequate supply of electrical energy, unless it is being proposed by a wholesale merchant plant; (3) be designed, located, or routed in the public interest, considering alternative sources of supply, locations, routes, individual hardships, engineering, safety, economic, and environmental factors (except that the PSCW cannot consider alternative sources and economic factors for wholesale merchant plants); (4) not have undue adverse impacts on the environment, public health and welfare, historic sites, geological formations, land and water aesthetics, or recreational uses; (5) not unreasonably interfere with orderly land use and development plans; and (6) not have a material adverse impact on the wholesale electric service market.<sup>228</sup> Because the high cost of developing a wind project on the Great Lakes is likely to exceed the PSCW's threshold for review,<sup>229</sup> a project proposed by a public utility could be expected to require PSCW approval. In contrast, projects proposed by non-utilities would require PSCW approval only if they exceeded 100 MW in capacity.

Currently, an offshore wind project in the Great Lakes likely would be reviewed as two separate projects. The PSCW likely would conduct a thorough review of the proposed construction of an offshore wind farm,<sup>230</sup> and dedicate a second permit review to concerns surrounding the construction of any related electric transmission facilities.<sup>231</sup> Nevertheless, because of their size and scope both types of projects likely would require certificates of public convenience and necessity. Whether conceived as a shallow- or deep-water project,<sup>232</sup> a

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227. A wholesale merchant plant is an electric generating facility not subject to a leased generation contract. *See* WIS. STAT. § 196.491(1)(w) (2007–2008); *see also id.* § 196.52(9)(a)3.

228. *Id.* § 196.491(3)(d).

229. *See supra* note 226.

230. *See* WIS. ADMIN. CODE PSC §§ 111.51–.53, 112.05(1)(a) (2008).

231. *Id.* § 112.05(1)(c).

232. HARNESSING WISCONSIN'S ENERGY RESOURCES, *supra* note 14, at 49–50. The PSCW Study Group assumed that a 200 MW project, comprised of forty 5 MW turbines spread over eleven square miles, would be connected to a land-based collector system by one or more 138 kilovolt (kV)

wind farm is likely a “[l]arge electric generating facility,” and thus subject to the permit application requirements of Wisconsin Statutes section 196.491(3)(a)(2m).<sup>233</sup> The same is likely true for electric transmission facilities associated with offshore wind farms.<sup>234</sup>

These requirements can potentially subject applicants to a lengthy and complicated permit process. First, at least sixty days before submitting an application to the PSCW, an offshore wind project developer would need to provide the WDNR with an engineering plan both describing the proposed facility and showing its location.<sup>235</sup> This description would need to list the proposed wind farm’s “major components . . . that have a significant air, water or solid waste pollution potential, and a brief description of the anticipated effects . . . on air quality, water quality, . . . and other natural resources.”<sup>236</sup> Within thirty days of a project developer’s submission of an engineering plan, the WDNR must respond with a list of necessary “permit[s] or approval[s] which, on the basis of the information contained in the engineering . . . plan, appear to be required.”<sup>237</sup>

Next, an offshore wind project developer would have to file an application for a certificate of public convenience and necessity with the PSCW at least six months before the project’s planned construction start.<sup>238</sup> Within thirty days, the PSCW would inform the developer whether its application is complete.<sup>239</sup> If the PSCW found the application to be incomplete, an applicant would have an unlimited number of opportunities—and, ostensibly, an unlimited amount of time—to either supplement or re-file its application.<sup>240</sup>

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submarine cables. *Id.* at 49. Turbines within the farm itself would be connected by 35 kV submarine cables. *Id.* Meanwhile, a deep-water 1,000 MW project, sited about twenty miles offshore in a water depth of 231 feet and covering approximately fifty-six square miles, would transmit electricity to two onshore substations via two 345 kV submarine cables. *Id.* at 50. Its two hundred 5 MW turbines would be linked by a 35 kV submarine system of cables. *Id.*

233. WIS. STAT. § 196.491(3)(a)2m.

234. This is likely true because the types of offshore wind farms contemplated for Lakes Michigan and Superior, as described in *supra* note 232, require “high-voltage transmission line[s],” as defined by WIS. STAT. § 196.491(1)(f) (including in this definition any “conductor of electric energy exceeding one mile in length designed for operation at a nominal voltage of 100 kilovolts or more, together with associated facilities” such as offshore substations and onshore collector systems).

235. *Id.* § 196.491(3)(a)3.a.

236. *Id.*

237. *Id.*

238. *Id.* § 196.491(3)(a)1.

239. *Id.*; see also *Clean Wisconsin, Inc. v. Public Serv. Comm’n*, 2005 WI 93, ¶¶ 59–60, 282 Wis. 2d 250, 700 N.W.2d 768 (holding that an application for a certificate of public convenience and necessity is “complete” if it includes all the information required by WIS. ADMIN. CODE PSC § 111.53(1) (2008)). Nevertheless, an application for a large electric generating facility may pass muster under a standard of substantial completeness, even if it has yet to receive the requisite non-PSCW permits or approvals. See WIS. STAT. § 196.491(3)(a)2m.

240. WIS. STAT. § 196.491(3)(a)2.

Finally, within 180 days of a determination of the application's completeness, the PSCW must take final action on the application for a certificate of public convenience and necessity, although the PSCW may petition the court for an extension of up to an additional 180 days "[u]pon a showing of good cause."<sup>241</sup> All things considered, the PSCW could issue a certificate of public convenience and necessity to an offshore wind farm no sooner than eight months after an applicant filed its first papers with the WDNR. In a worst-case scenario, the permitting process could take years, all depending on whether the PSCW deemed a project developer's application to be complete.<sup>242</sup>

*b. The Public Trust Doctrine*

Aside from cost, the most significant challenges an offshore wind farm developer likely can expect are public concerns regarding the project's environmental impacts and aesthetic effects on shoreline views. The state protects these interests through its public trust doctrine.

This long-held doctrine preserves public use rights in the state's navigable waters, including Lakes Michigan and Superior, and is embodied by Article IX, section 1 of the Wisconsin Constitution. The public trust doctrine protects not only "the river Mississippi and the navigable waters leading into the Mississippi and St. Lawrence, and the carrying places between the same,"<sup>243</sup> it also holds the beds of the state's navigable waters in public trust.<sup>244</sup>

The concept behind the public trust doctrine is that "some resources are subject to a perpetual trust that forecloses private exclusion rights."<sup>245</sup> Serving as trustee, the state holds title to its navigable waters, including the beds of Lakes Michigan and Superior up to the ordinary high-water mark.<sup>246</sup>

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241. *Id.* § 196.491(3)(g).

242. *See supra* note 239.

243. WIS. CONST. art. IX, § 1. According to one commentator, this provision has not been amended since Wisconsin's admission to statehood in 1848. *See* Jason J. Czarnecki, *Environmentalism and the Wisconsin Constitution*, 90 MARQ. L. REV. 465, 468 (2007).

244. Czarnecki, *supra* note 243.

245. *Id.* (quoting Joseph D. Kearney & Thomas W. Merrill, *The Origins of the American Public Trust Doctrine: What Really Happened in Illinois Central*, 71 U. CHI. L. REV. 799, 800 (2004)).

246. An ordinary high-water mark is a "jurisdictional benchmark" that guides the Corps in the administration of its RHA section 10 and CWA section 404 regulatory programs. U.S. Army Corps of Engineers–Detroit District, *Ordinary High Water Mark and Low Water Datum*, [http://www.lre.usace.army.mil/\\_kd/go.cfm?destination=Page&pge\\_id=1879&dialog=0](http://www.lre.usace.army.mil/_kd/go.cfm?destination=Page&pge_id=1879&dialog=0) (last visited June 27, 2010). This "line on the shore coincide[s] with the elevation contour that represents the approximate location of the line on the shore established by fluctuations of water and indicated by physical characteristics such as shelving, destruction of terrestrial vegetation, presence of litter or debris, or changes in the character of soil." *Id.* Lake Michigan's ordinary high-water mark is

The state supreme court has held that these waters “should be free to all for commerce, for travel, [and] for recreation,”<sup>247</sup> and the Wisconsin Legislature has delegated enforcement authority of this trust to the WDNR.<sup>248</sup>

Nevertheless, “the legislature may authorize limited encroachments upon the beds of such waters where the public interest will be served.”<sup>249</sup> To that end, chapter 30 of the Wisconsin Statutes gives the WDNR the discretion to permit the placement of building structures on the beds of navigable waterways.<sup>250</sup> In keeping with its mandate to protect the public trust, the WDNR may issue building structure permits only after having weighed relevant policy factors, including “the desire to preserve the natural beauty of our navigable waters, to obtain the fullest public use of such waters, including but not limited to navigation, and to provide for the convenience of riparian owners.”<sup>251</sup>

Under a separate provision of the Wisconsin Statutes, the legislature has the authority to issue lakebed grants.<sup>252</sup> Even though the legislature alone has the authority to approve a lakebed grant, the WDNR plays a critical role in lawmakers’ decision making. The WDNR must prepare a detailed report assessing the impacts of such a conveyance, including the lakebed area’s location and description, the proposed conveyance’s purposes, expected use of the lakebed area within the proposed conveyance, the effect of the proposed conveyance on public trust uses, potential subsequent conveyances, if any, and the ability of the grantee to manage the use of the lakebed area.<sup>253</sup> Finally, the WDNR must conclude its report with a determination whether legislation conveying a lakebed area is “consistent with protecting and enhancing a public trust purpose,” including a consideration of whether “any commercial uses of the lakebed area subject to the proposed conveyance are

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581.5 feet above sea level, while the corresponding mark in Lake Superior is at an elevation of 603.1 feet. *Id.* The Corps has jurisdiction over lakebed areas below these marks, but Wisconsin has authority over areas above these lines. *Id.*

247. *Diana Shooting Club v. Husting*, 156 Wis. 261, 271, 145 N.W. 816, 820 (1914).

248. *Hilton v. Dep’t of Natural Res.*, 2006 WI 84, ¶¶ 19–20, 293 Wis. 2d 1, 717 N.W.2d 166 (internal citation omitted).

249. *Hixon v. Pub. Serv. Comm’n*, 32 Wis. 2d 608, 618, 146 N.W.2d 577, 582 (1966) (internal citation omitted).

250. *See* WIS. STAT. § 30.12 (2007–2008) (outlining permit requirements for “[s]tructures and deposits in navigable waters”); *id.* § 30.21 (permitting “[u]se of beds of Great Lakes by public utilities”).

251. *Sterlingworth Condo. Ass’n v. Dep’t of Natural Res.*, 205 Wis. 2d 710, 724–25, 556 N.W.2d 791, 796 (Ct. App. 1996) (emphasis added) (quoting *Hixon*, 32 Wis. 2d at 620, 556 N.W.2d 791).

252. *See* WIS. STAT. § 13.097 (2007–2008).

253. *Id.* § 13.097(4).

minor and incidental” when compared to the public’s ability to continue accessing the area.<sup>254</sup>

Finally, in conjunction with the Board of Commissioners of Public Lands (BCPL),<sup>255</sup> the WDNR may approve leases of public lands beneath Lakes Michigan and Superior,<sup>256</sup> as long as any proposed physical change in the area that may result from the lease is “consistent with the public interest in the navigable waters involved.”<sup>257</sup> Lease terms shall not exceed fifty years and must include “any and all conditions” the BCPL deem necessary to protect the public interest.<sup>258</sup>

Because of the novelty of offshore wind farms, if the state legislature and administrative agencies were to issue a project applicant’s request for a building structure permit, they likely would do so under Wisconsin Statutes section 30.12 or agree to a medium-term lease of a lakebed area to the developer, as allowed in section 24.39. Unlike lakebed grants, which are essentially permanent conveyances, building structure permits and lakebed leases are temporary and more likely to pass muster with a body politic that is curious, but not yet entirely sure, about offshore wind energy’s potential. State officials desiring to obtain the fullest public use of the state’s navigable waters can balance the need to enforce the public trust doctrine—and thus protect traditional uses of commerce, travel, and recreation—with increasing demands to find creative ways to deliver to their constituents electricity derived from renewable energy sources.<sup>259</sup>

*c. The Wisconsin Environmental Policy Act*

Much like NEPA,<sup>260</sup> the Wisconsin Environmental Policy Act (WEPA) mandates that state agencies evaluate the “environmental, socioeconomic, energy, archeological, agricultural, and other effects of a proposed project before issuing permits or other approvals.”<sup>261</sup> Using language that echoes NEPA, the Wisconsin Legislature has outlined a policy under which all state agencies, including the PSCW, must prepare a “detailed statement” before engaging in any “major actions significantly affecting the quality of the human environment.”<sup>262</sup>

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254. *Id.* § 13.097(6).

255. *Id.* § 24.39(2).

256. *Id.* § 24.39(4)(c)–(d).

257. *Id.* § 24.39(4)(c).

258. *Id.* § 24.39(4)(e).

259. *See supra* notes 245–49 and accompanying text.

260. *See discussion supra* Part III.A.1.c.

261. HARNESSING WISCONSIN’S ENERGY RESOURCES, *supra* note 14, at 110; *see also* WIS. STAT. § 1.11 (2007–2008).

262. WIS. STAT. § 1.11.

For utility projects such as offshore wind farms, the PSCW has established guidelines to help it determine whether the project would require a full environmental impact statement (EIS) or a less rigorous environmental assessment (EA).<sup>263</sup> Nevertheless, the PSCW has the discretion to prepare an EIS for any project that it believes is controversial or that could significantly affect the environment.<sup>264</sup>

Oftentimes, WEPA also compels “[i]nteragency cooperation”<sup>265</sup> between the PSCW and the WDNR. A statutory provision requires the two agencies to coordinate on many projects<sup>266</sup> and allows them to prepare a joint EIS for major electric generation or transmission projects.<sup>267</sup> Any offshore wind farm developed in Lakes Michigan or Superior likely would be the result of such collaboration.

## 2. Renewable Energy Policy

At the dawn of the twenty-first century, among the states Wisconsin showed early promise of placing itself on the vanguard of renewable energy policy. However, over the past decade, the Wisconsin Legislature has declined to take any real significant steps toward developing a long-term renewable energy strategy.

In 1999, Wisconsin created a Renewable Resource Credit Program that allows utilities to buy and sell renewable resource credits (or, renewable energy credits, as they are known in other states) for any electricity generated in excess of the percentage specified for a given year.<sup>268</sup> Credits also may be rolled over for use in up to four subsequent years.<sup>269</sup> The movement of these credits is tracked on the Midwest Renewable Energy Tracking System.<sup>270</sup>

Also in 1999, Wisconsin became the first state to enact a renewable portfolio standard without restructuring its electric utility industry.<sup>271</sup> However, the legislature’s first attempt at compelling state utilities to invest in renewable energy sources was relatively modest: Wisconsin required them to obtain only 2.2% of their electricity sold to customers from renewable energy

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263. See WIS. ADMIN. CODE PSC §§ 4.10–4.30 (2008).

264. *Id.* § 4.40.

265. *Id.* § 4.60.

266. See WIS. STAT. § 196.025(2m) (2007–2008).

267. See WIS. ADMIN. CODE PSC § 4.60 (2008).

268. See WIS. STAT. § 196.378(3) (2007–2008).

269. *Id.*

270. DSIRE: Database of State Incentives for Renewables & Efficiency, Wisconsin Incentives/Policies for Renewables and Efficiency: Renewable Portfolio Standard, [http://dsireusa.org/library/includes/incentive2.cfm?Incentive\\_Code=WI05R&state=WI&CurrentPageID=1&RE=1&EE=1](http://dsireusa.org/library/includes/incentive2.cfm?Incentive_Code=WI05R&state=WI&CurrentPageID=1&RE=1&EE=1) (last visited June 27, 2010) [hereinafter DSIRE: Wisconsin].

271. DSIRE: Wisconsin, *supra* note 270.

resources by 2012.<sup>272</sup> In 2006, the legislature raised this requirement to 10% by 2015, but this RPS still lags behind those of other states, many of which require 20% of their energy to come from renewable sources by 2020 or sooner.<sup>273</sup>

Recently, the ambitious Clean Energy Jobs Act had promised to help Wisconsin catch up to its peer states. Introduced in the Wisconsin Legislature in January 2010<sup>274</sup> and based on recommendations made by Governor Jim Doyle's Task Force on Global Warming in 2008,<sup>275</sup> the Act proposed to move up the date (from 2015 to 2013) by which state electric utilities would be required to meet the 10% RPS, and it would have increased Wisconsin's RPS to 20% by 2020 and to 25% by 2025.<sup>276</sup> Notably, the Act also would have required state electric utilities to derive at least 30% of their renewable energy from in-state facilities, thus encouraging development of more renewable energy projects in the state of Wisconsin and discouraging reliance on renewable energy generated elsewhere, such as at wind farms in Minnesota, the Dakotas, and Iowa.<sup>277</sup> This largely would be accomplished by a feed-in tariff program through which electric utilities would pay renewable energy producers located within their service areas a fixed price per unit of electricity produced (the feed-in tariffs).<sup>278</sup> According to a comprehensive economic impact analysis conducted by the state government, such changes were projected to help jumpstart Wisconsin's green economy and directly create at least 15,000 green jobs in Wisconsin by 2025, including more than 1,800 jobs in the first year after enactment.<sup>279</sup> In addition, the Act was projected to create between 800 and 1,800 well-paying construction jobs each year from 2011 to 2025, and more than 2,000 high-wage manufacturing jobs after the new laws

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272. *Id.*

273. DSIRE: Database of State Incentives for Renewables & Efficiency, Renewables Portfolio Standards for Renewable Energy, <http://dsireusa.org/library/includes/seeallincentivetype.cfm?type=RPS&currentpageid=7&back=regtab&EE=1&RE=1> (last visited June 27, 2010).

274. S. 450, 2009–2010 Leg., Reg. Sess. (Wis. 2010).

275. See generally GOVERNOR'S TASK FORCE ON GLOBAL WARMING, WISCONSIN'S STRATEGY FOR REDUCING GLOBAL WARMING (2008), [http://dnr.wi.gov/environmentprotect/gtfgw/documents/Final\\_Report.pdf](http://dnr.wi.gov/environmentprotect/gtfgw/documents/Final_Report.pdf). For more information about the history of the Governor's Task Force on Global Warming, see Jim Doyle, *Challenges and Opportunities for Regulating Greenhouse Gas Emissions at the State, Regional, and Local Level*, 27 UCLA J. ENVTL. L. & POL'Y 213 (2009).

276. See Wis. S. 450 §§ 178–186.

277. *Id.* §§ 170, 183.

278. *Id.* § 208.

279. Memorandum on Economic Assessment of Clean Energy Jobs Act from Econ. and Policy Staff to Energy Independence Cabinet Team 6–8 (Jan. 5, 2010), <http://www.wisgov.state.wi.us/docview.asp?docid=18757>.

were fully implemented.<sup>280</sup>

However, the Clean Energy Jobs Act died in the state senate as legislators failed to act on the bill before the session's close of business for the year.<sup>281</sup> The bill's future, and the likelihood of its eventual passage, is unclear, with significant changeover expected at the state capitol after the election of a new governor and legislature in the fall of 2010.<sup>282</sup>

#### IV. TINKERING WITH WISCONSIN'S NOVEL EXPERIMENT: CREATING OPPORTUNITIES TO TEST OFFSHORE WIND ENERGY

There is much to be said for the fact that Wisconsin policy makers have shown the curiosity to investigate the merits of offshore wind energy. Few other states can claim to be so bold. However, Wisconsin can, and should, take additional steps to increase the number of opportunities to produce offshore wind energy in Lakes Michigan and Superior.

##### A. *Smoother Sailing: Streamlining the Permitting Process for Offshore Wind Projects*

To the extent that the Wisconsin Legislature has equipped the PSCW with tools for "interagency cooperation" to help utilities and state agencies satisfy WEPA requirements,<sup>283</sup> the legislature could further streamline the permitting process for offshore wind farm developers by creating an offshore wind coordinator who would operate independently of both the PSCW and the WDNR.

This individual would serve as the point person for all offshore wind project applications. Depending on the existing workload of the state's WEPA coordinator,<sup>284</sup> the legislature could save money and add such duties to the WEPA coordinator's job description. However, given the multiple permits involved with offshore wind farms and the industry's potential for growth,<sup>285</sup> it likely would be wiser for the legislature to make offshore wind

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280. *Id.* at 1, 8.

281. Patrick Marley, *Deal Reached on Payday Loans: But Energy, Transit, Voting Bills Die in Senate*, MILWAUKEE J. SENTINEL, Apr. 23, 2010, at 1A (noting that the state senate declined to forward the Clean Energy Jobs Act to the state assembly on the fortieth anniversary of Earth Day, which was founded by the late U.S. Senator Gaylord Nelson of Wisconsin).

282. *Id.*

283. See WIS. ADMIN. CODE PSC § 4.60 (2008) (ordering the PSCW to "consult with federal and state agencies early when preparing an EA or EIS" and allowing the agency to "enter into agreements with other federal or state agencies to develop a joint EIS"); *id.* § 4.80 (outlining the powers and duties of the state's WEPA coordinator, whose main tasks are to "oversee performance of environmental impact statement procedures" and to serve as the PSCW's liaison to permit applicants with questions regarding WEPA requirements); see also WIS. STAT. § 196.025(2m)(b) (2007–2008) (requiring the PSCW and the DNR to "coordinate the execution of their respective duties under [WEPA] for any action" of either agency regarding a project, as necessary).

284. See *supra* note 283.

285. HARNESSING WISCONSIN'S ENERGY RESOURCES, *supra* note 14, at 8.

applications the sole responsibility of one person.

At a fundamental level, this offshore wind coordinator would have duties similar to those carried out by the state's WEPA coordinator, in the sense that she would "[a]ct as contact for other state agencies seeking assistance" on offshore wind farm issues, in addition to serving as the state's public liaison for offshore wind project applications.<sup>286</sup> However, similar to the United Kingdom's Infrastructure Planning Commission,<sup>287</sup> the offshore wind coordinator should have full power to issue permits to offshore wind projects,<sup>288</sup> and most importantly, should serve independently of both the PSCW and the WDNR. This detachment would allow the coordinator to make permit decisions free of the influence and pressure inherent in interagency politics.

By the same token, the legislature should preempt potential allegations that the offshore wind coordinator would be vested with too much power under a so-called undemocratic permitting process, reminiscent of the criticism that doomed the U.K.'s Infrastructure Planning Commission.<sup>289</sup> To that end, state lawmakers could consciously limit the size of the bureaucracy, inserting provisions in legislation creating the offshore wind coordinator to allow the position to be expanded to a small commission or council only if the number and complexity of incoming permit applications reached a certain threshold.<sup>290</sup>

The PSCW and WDNR could further properly restrain the offshore wind coordinator's independence by drafting clear statewide policy statements regarding what types of offshore wind projects may be permitted. In concert with existing authorities such as WEPA, these binding policy statements would serve as strategic blueprints to guide the coordinator's permitting decisions.<sup>291</sup> Moreover, similar to the national policy statements created under the U.K.'s Planning Act, these policy statements could be tailor-made

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286. See WIS. ADMIN. CODE PSC § 4.80(1)(a) (2008). As discussed earlier, offshore wind projects likely would require full environmental impact statements. See *supra* Part III.B.1. However, to expedite the process an offshore wind coordinator could conduct a generic joint EIS that would incorporate standards set forth by both the WDNR and the PSCW. See WIS. ADMIN. CODE PSC § 4.40; HARNESSING WISCONSIN'S ENERGY RESOURCES, *supra* note 14, at 138. The offshore wind coordinator could begin at least the preliminary steps of this evaluation process in advance of receiving an applicant's completed project proposal.

287. See *supra* Part II.A.2.

288. In situations in which Wisconsin shares jurisdiction with federal agencies, to the extent that federal permits are necessary, see *supra* Part III.A.1, the offshore wind coordinator also should be allowed to enter into agreements with the corresponding federal agencies to issue joint permits.

289. See *supra* Part II.A.2.

290. Alternatively, if lawmakers prefer to give the position a trial period of, say, five to seven years, they could write into the legislation a sunset clause, which could be helpful if the person who serves as the inaugural offshore wind coordinator turns in a disappointing performance.

291. See *supra* Part II.A.2.

for each project proposal, open to both public comment and debate and approval by the legislature.<sup>292</sup> The offshore wind coordinator should be allowed to grant or deny a permit to a project only after having provided members of the public and state legislature several genuine opportunities for consultation and scrutiny and after assessing the technical merits of each project application.<sup>293</sup> As with any other state administrative agency, the offshore wind coordinator's decisions should be subject to judicial review.

*B. The Air Over There: European Lessons in Facilitating Cooperative Federal–State Renewable Energy Policy Making*

Much of the literature debating the appropriateness of a national RPS is either decidedly for or against such a standard.<sup>294</sup> Yet, instead of excoriating one position or the other, commentators—and, in turn, policy makers—should focus on the many ways in which federal and state governments can collaborate to advance their respective renewable energy goals.<sup>295</sup> Viewed from another perspective, such partnerships are essential. For example, while the federal government has the authority to regulate interstate energy transmission, only state and local governments can oversee construction of electricity generation and transmission facilities.<sup>296</sup> Therefore, taking cues from the European Union (EU) and EU member nations that have endeavored to bring their energy programs into the twenty-first century,<sup>297</sup> the federal and Wisconsin state governments should cooperate to promote renewable energy policies, with each governmental entity taking on a complementary yet critical role.

1. The Federal Government

Both the federal and Wisconsin state governments seek to encourage the development of renewable energy industries. However, a number of factors dictate against a national RPS,<sup>298</sup> most notably the fact that Wisconsin, like more than two-dozen other states,<sup>299</sup> already has such a standard in place.<sup>300</sup>

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292. *See id.*

293. *See id.*

294. *Compare* Sovacool & Cooper, *supra* note 214, at 146–47 (arguing that a “national RPS would decrease consumer electricity prices, . . . benefit utility profits, . . . help American companies by creating more new jobs for American workers[. . . and] provide secondary environmental and social benefits”), *with* Michaels, *supra* note 7, at 110–12 (citing “jurisdictional conflicts . . . between state and federal regulators,” concluding that a “national RPS is an inefficient and inequitable response to emissions of pollutants and [greenhouse gases]”).

295. *See* Rosenberg, *supra* note 215, at 542–43.

296. *See id.* at 535 (referring to the congressionally authorized scope of the Federal Energy Regulatory Commission (FERC)); *see also* WIS. ADMIN. CODE PSC §§ 111–112 (2008).

297. *See supra* Part II.A.1.

298. *See* Michaels, *supra* note 7, at 110–12.

299. *See supra* note 6.

Rather, through Congress the federal government can best support renewable energy sources by (1) expanding its arsenal of financial incentives to help capitalize these upstart industries, particularly capital-intensive offshore wind energy, and (2) investing in and clearing regulatory hurdles to improving an outdated national electric grid.

This two-pronged approach can help eliminate what are currently the most significant barriers to offshore wind development—the need for substantial capital to finance high-cost construction projects and a lack of integration into the national electric grid.<sup>301</sup> Moreover, by implementing this strategy the federal government could send a clear signal to renewable energy investors, producers, and consumers regarding the nation’s policy shift to a twenty-first-century energy agenda.

On the one hand, the federal government can provide market stability—and, thus, alleviate much of the risk faced by offshore wind energy investors and project developers—by adding some longevity to tax incentives such as the PTC<sup>302</sup> and embracing other market support schemes already employed by EU countries, including investment grants and low-interest loan guarantees.<sup>303</sup> On the other hand, by helping expand the offshore wind industry and thus increasing the number of opportunities consumers have to purchase their electricity from renewable energy sources, the federal government could do

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300. See WIS. STAT. § 196.378 (2007–2008).

301. See Brown & Chandler, *supra* note 219, at 486, 491–92; Sanya Carleyolsen, *Tangled in the Wires: An Assessment of the Existing U.S. Renewable Energy Legal Framework*, 46 NAT. RESOURCES J. 759, 764–65, 790 (2006) (noting that “many [renewable energy] policy experts stress the need for a new law that both guarantees access to the grid and has a built-in mechanism to make renewable power cost-competitive with oil and natural gas”).

302. With its recent passage of the American Recovery and Reinvestment Act of 2009, Congress again gave the PTC for wind power a short extension, this time until January 1, 2013. See *supra* note 221 and accompanying text. However, as several commentators have argued, to provide any semblance of market stability, Congress needs to make the tax credit more, if not ultimately, permanent. See Rosenberg, *supra* note 215, at 542; Brown & Chandler, *supra* note 219, at 486; Rabe, *supra* note 219, at 15–16; Richard A. Westin, *Energy and Environmental Tax Changes in the Flood of Recent Federal Revenue Laws and What They Imply*, 15 PENN ST. ENVTL. L. REV. 171, 276, 294 (2007). Such a move would not be all that extraordinary. Recently, President Obama proposed to make permanent a popular business research and development tax credit, albeit for somewhat different reasons: “to spur the slumping economy” and encourage small businesses to create high-wage jobs for middle-class Americans. Jackie Calmes, *Obama to Pitch Permanent Research Tax Credit*, N.Y. TIMES, Sept. 5, 2010, at A22.

303. See *Commission Staff Working Document*, *supra* note 38, at 21–23. The author concedes that EU policy makers have found the effectiveness of investment grants difficult to measure because generally EU member countries have used them as additional policy tools, in concert with other mechanisms such as feed-in tariff or renewable green certificate programs. See *Commission Staff Working Document*, *supra* note 38, at 9. Nevertheless, because the startup costs of offshore wind farms are significantly higher than those related to land-based projects, matching grants and low-interest loans could allow the federal government to assume some of the upfront risk and may help entice private investment in such enterprises.

its part in satisfying Americans' desire to wean themselves off fossil fuels.<sup>304</sup>

However, to deliver renewable energy to the consumer marketplace, the federal government needs to invest in transforming the existing electricity transmission infrastructure into a "smart grid" so that it may incorporate power from renewable sources like solar panels and wind turbines.<sup>305</sup> A smart grid should be equipped not only to accommodate the intermittent-generation nature of renewable energy sources such as solar and wind,<sup>306</sup> but also to be more cost- and energy-efficient in electricity delivery from generation point to consumer.<sup>307</sup>

Finally, Congress needs to counter the negative effects of more than a decade of rapid deregulation with prudent regulatory controls that support localized electricity generation and market transparency.<sup>308</sup> The most serious problems facing the existing national grid are the lack of system reliability and increasing externality costs, both of which largely are due to uninhibited consumer demand.<sup>309</sup> Federal regulations that aim to reduce these strains on the national grid could have the effect of improving consumer access to renewable energy sources such as offshore wind.<sup>310</sup>

In the lead-up to announcing its 20 20 by 2020 plan, the European

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304. Not only are renewable energy sources such as wind and solar supported by roughly nine out of ten Americans, reportedly three-quarters of the American public is willing to pay more to consume electricity produced by these sources, if doing so would help reduce global warming. *See* Americans' Views, *supra* note 4. Incidentally, 64% of the public also is "willing to pay higher taxes on gasoline and other fuels if the money [is] used for research into renewable sources like solar and wind energy." *Id.*

305. Matthew L. Wald, *Hurdles (Not Financial Ones) Await Electric Grid Update*, N.Y. TIMES, Feb. 7, 2009, at A11; *see also supra* note 301.

306. *See* Wald, *supra* note 305.

307. For an insightful proposal of distributed generation as a flexible means by which to introduce these benefits to the electricity marketplace, see Kristin Bluvas, Comment, *Distributed Generation: A Step Forward in United States Energy Policy*, 70 ALB. L. REV. 1589, 1601–05 (2007). Of course, there still may be the power-line power struggles inherent to shared federal and state regulation of the electric grid. Some ideas to resolve these anticipated disputes include federal assumption of sole responsibility for approving electric transmission lines, as was the case in the 1930s with natural gas pipelines, and creation of a "national commission that would present a master plan for thousands of miles of new transmission lines that Congress could approve for the whole country in spite of local objections for individual pieces." Wald, *supra* note 305.

308. *See* Bluvas, *supra* note 307, at 1597–1601. One commentator lays the blame squarely at the feet of the FERC, which in 1996 promulgated FERC Order 888, "open[ing] the once regulated electricity market to competition" by requiring "all utilities to allow their transmission lines to be used by competitors." *Id.* at 1593. This deregulation had the short-term effect of introducing price competition to the marketplace and thus benefiting consumers. *Id.* However, in the long run deregulation resulted in "unanticipated consequences for the electricity system," including a spike in public utility mergers, which helped "foster[] an environment where larger centralized generation could grow." *Id.* at 1594.

309. *Id.* at 1597–1601.

310. *Id.* at 1605.

Commission identified similar access issues as a key barrier to the continued development of that continent's renewable energy sources.<sup>311</sup> But until the EU community addressed this and other long-standing barriers to offshore wind development, industry expansion stalled.<sup>312</sup>

Without bold congressional action, the same result may be expected here. Admittedly, there is no denying the enormity of such challenges. However, federal lawmakers could take comfort in knowing that other nations have confronted these very same dilemmas, and have emerged even more committed and optimistic about the prospects of offshore wind energy.<sup>313</sup> Besides, for all practical purposes, only Congress—perhaps, with a little help from the Departments of Treasury, Energy, and Interior—has the political and fiscal wherewithal to effectively address such colossal tasks.

## 2. The Wisconsin State Government

Nevertheless, there is much Wisconsin can do on its own to advance the development of offshore wind energy and other renewable sources. In addition to enacting the Clean Energy Jobs Act, the state legislature can enhance the Act's proposed feed-in tariff program with a premium provision that would give individual renewable energy producers an incentive to produce additional electricity to earn competitively awarded premiums, or bonuses.<sup>314</sup> By guaranteeing participating producers a tariff subsidy for a long-term period of ten to twenty years, the state could reassure nervous industry investors at least until Wisconsin's renewable electricity market becomes relatively self-sufficient and therefore encourage development of offshore wind farms in Lakes Michigan and Superior.

However, such incentives likely would not be of much benefit to renewable energy producers unless they were able to rely on a modern and efficient electric grid. To that end, Wisconsin would be even better served if it followed the example of Portugal,<sup>315</sup> one EU member nation that since 2000

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311. *Commission Staff Working Document*, *supra* note 38, at 16; *see also* 2009 Renewable Energy Directive, *supra* note 17, at 31.

312. *See supra* notes 45–46 and accompanying text.

313. *See supra* notes 58–59 and accompanying text.

314. *See* S. 450, 2009–2010 Leg., Reg. Sess. § 208 (Wis. 2010); *see also supra* notes 38 & 278 and accompanying text.

315. The comparison with Portugal is worthwhile. Even though Portugal is nearly twice as populous as Wisconsin (10.6 million residents to 5.6 million), its status as one of more than two-dozen EU member nations is similar to Wisconsin's status as one of the fifty states. U.S. Department of State, Background Note: Portugal, <http://www.state.gov/r/pa/ei/bgn/3208.htm> (last visited Sept. 9, 2010); U.S. Census Bureau, State & County QuickFacts: Wisconsin, <http://quickfacts.census.gov/qfd/states/55000.html> (last visited Sept. 9, 2010). Moreover, Portugal's and Wisconsin's economies are nearly the same size—Portugal has a gross domestic product of \$220 billion, while Wisconsin's gross state domestic product is \$240 billion—and both feature a mixed base of manufacturing, agriculture, and service industries. U.S. Department of State, Background

has taken bold steps to revolutionize its energy program. In only a decade, Portugal has established itself as a model for other EU nations seeking to transition from reliance on traditional to renewable energy sources.<sup>316</sup> By purchasing at fair market value prices all of the country's electric transmission lines, the Portuguese government created the basis of a single regulated and publicly traded company that now operates all of Portugal's electric lines.<sup>317</sup> With this critical step, the Portuguese government "separat[ed] making electricity from transporting it," thus loosening electric utilities' hold on the market and opening the door for competition from new producers of renewable energy, which traditionally had been discouraged by utilities that invested heavily in fossil fuels.<sup>318</sup> In addition, the national grid was improved and modernized to accommodate electricity intermittently produced by renewable sources such as wind and solar power, thus assuring producers that they could readily and reliably transport the necessary amount of electricity to their consumers.<sup>319</sup> By investing \$637 million in modernizing its national electric grid,<sup>320</sup> Portugal has transitioned to a renewable energy program that the International Energy Agency has heralded as a "remarkable success."<sup>321</sup>

Wisconsin also could achieve remarkable progress in its renewable energy efforts if it made significant investments in upgrading the state's electric grid, an endeavor that already is being investigated by some of the leading transmission line operators in the state and region.<sup>322</sup> In addition to modernizing the grid to better accommodate distribution of wind power

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Note: Portugal, *supra*; Bureau of Economic Analysis, Gross Domestic Product by State Interactive Map, <http://www.bea.gov/regional/gdpmap/GDPMap.aspx> (last visited Sept. 9, 2010).

316. See Elisabeth Rosenthal, *Portugal Gives Itself a Clean-Energy Makeover*, N.Y. TIMES, Aug. 10, 2010, at A1; see also REN, Key Milestones, [http://www.ren.pt/vEN/RENGroup/KeyMilestones/Pages/grupo-ren\\_key-milestones.aspx](http://www.ren.pt/vEN/RENGroup/KeyMilestones/Pages/grupo-ren_key-milestones.aspx) (last visited Sept. 8, 2010).

317. Rosenthal, *supra* note 316.

318. *Id.*

319. *Id.* (noting that Portugal's national energy transmission company, REN, "uses sophisticated modeling to predict weather, especially wind patterns, and computer programs to calculate energy from the various renewable-energy plants," but to "ensure a stable power base" it also "maintain[s] a base of fossil fuel that can be fired up at will").

320. *Id.* Portuguese government officials estimate that the total effort to revamp the country's energy structure will cost about \$22 billion, or about \$2.3 billion a year less to operate than in past years. *Id.* Notably, Portugal's energy restructure did not create any new taxes or public debt, in part because the new electricity sources (wind and solar) "replaced electricity previously produced by buying and burning imported natural gas, coal and oil." *Id.* Restructuring costs were either absorbed by the private companies operating Portugal's grid and renewable energy plants or filtered through electricity rates paid by consumers. *Id.*

321. *Id.* (internal quotation marks omitted).

322. Thomas Content, Study Will Consider New High-Voltage Lines for Renewable Power, MILWAUKEE J. SENTINEL on the Web (Aug. 18, 2010), <http://www.jsonline.com/business/53623657.html>.

generated in Lakes Michigan and Superior, the state government could loosen large utilities' hold on the market and pave the way for competition from upstart renewable energy producers.

Nevertheless, it remains to be seen how much willpower the state of Wisconsin has for an energy makeover. A substantial overhaul of Wisconsin's electric grid would require state policy makers to tap a considerable amount of both political and financial capital that currently is in short supply and, in all likelihood, will be so for at least several more years. The potential political shift in the fall 2010 elections and a slow economic recovery from the 2008–09 recession dull the prospects here of a large-scale energy program restructure such as that undertaken in Portugal over the past decade. That country's transition was enabled by "huge government support and intervention," concepts that on this side of the Atlantic are subject to an increasing measure of public skepticism.<sup>323</sup> Moreover, like residents of many other European countries, Portuguese households are accustomed to paying higher electricity prices—"about twice what Americans pay"—and thus they have not balked at a 15% rise in prices over the past five years, an increase likely attributable in part to the country's renewable energy transition.<sup>324</sup> In Wisconsin, as in much of the United States, so long as consumers can readily purchase cheap electricity—electricity generated from fossil fuels, which remain in large supply here—it is unlikely that there will be much public pressure for a renewable energy transition.

#### V. WISCONSIN'S NEED FOR A MORE NOVEL EXPERIMENT: A CALL TO ENACT COMPREHENSIVE OFFSHORE WIND ENERGY LEGISLATION

On the other hand, recent man-made environmental disasters—most notably, history's largest marine oil spill in the summer of 2010—have "renewed questions about the risks and unpredictable costs of America's unremitting dependence on fossil fuels."<sup>325</sup> In fact, whether Americans truly are ready to divorce themselves from oil and coal remains the single-most important question in the debate over the need for renewable energies such as wind power.

Although the public seems to overwhelmingly support such change,<sup>326</sup> the expansion of wind power in this country has been hampered because of a

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323. Rosenthal, *supra* note 316.

324. *Id.*

325. *Id.*; *see supra* note 130.

326. 20% WIND ENERGY BY 2030, *supra* note 90, at 116. Citing a 2005 poll conducted by Yale University, the U.S. Department of Energy contends that 87% of the population supports the expansion of wind energy development. Nevertheless, the agency also concedes that NIMBY opposition to wind farms "can strengthen when particular [project] sites are proposed." *Id.*

“complex interplay of factors,” including practical,<sup>327</sup> environmental,<sup>328</sup> and intangible considerations.<sup>329</sup> These factors notwithstanding, together they have not inhibited the expansion of wind power development as significantly as has federal lawmakers’ general reticence to embrace sustainable energy alternatives to fossil fuels.<sup>330</sup> Such reticence is difficult to justify, especially considering the national fatigue with unpredictable fossil fuel prices.<sup>331</sup> Federal legislators have yet to develop a national standard reflecting the country’s twenty-first-century energy needs.<sup>332</sup>

Congress would be wise to enact such legislation in the near future, and not solely for energy-related reasons. As of this writing, the American economy continued to languish as recent government efforts to stimulate job creation have failed to do much else than “stop[] the bleeding.”<sup>333</sup> A significant investment, both politically and financially, in sustainable or “green” industries could provide the American economy the jumpstart it so badly needs, and could lay the foundation for the country’s long-term energy solution.<sup>334</sup> The future is promising: Already, the United States leads the world in wind-energy-generating capacity.<sup>335</sup> Still, this country is likely years away from implementing the type of regulatory framework now in place in Europe.<sup>336</sup>

Although they should seek out opportunities for collaboration,<sup>337</sup> Wisconsin lawmakers should not wait for Congress to act. Rather, it is time for the state legislature to address Wisconsin’s pressing energy concerns and lay the foundation for long-term economic security by enacting

327. See *supra* notes 141–53 and accompanying text.

328. See *supra* notes 131–39 & 154–58 and accompanying text.

329. See generally Cotter, *supra* note 6, at 415–28 (internal quotations omitted).

330. See *supra* Part III.A.2.

331. According to two commentators, “[b]etween 1995 and 2005, natural gas prices rose by an average of 15% per year, and the electricity sector’s demand for natural gas increased from 24% of total natural gas consumption in 2000 to 29% in 2005.” Sovacool & Cooper, *supra* note 214, at 100. Extreme examples were seen in Illinois, where in fall 2006 ratepayers protested projected one-year utility rate increases ranging from 22% to 55%, and in Boston, Massachusetts, where homeowners and small businesses’ electricity bills rose by 78% from 2002 to 2006. *Id.* at 101. Meanwhile, “[i]n some areas of the United States, coal prices actually doubled between 2002 and 2004.” *Id.* at 102; see also *supra* notes 4 and 294.

332. See discussion *supra* Part III.A.2.

333. Calmes, *supra* note 302 (quoting President Barack Obama).

334. As President Obama sees it, “Renewable energy isn’t some[] pie in the sky. It’s not part of a far-off future. It’s happening all across America right now . . . . It can create millions of additional jobs and entire new industries if we act right now.” *Obama Wants Green Economy*, MILWAUKEE J. SENTINEL, Jan. 17, 2009, at 3A.

335. See *supra* note 81 and accompanying text.

336. See discussion *supra* Part IV.

337. See *supra* Part IV.B.

comprehensive legislation that will foster the well-ordered development of an offshore wind energy industry in the state's very own Great Lakes waters. Wisconsin's novel experiment need not necessarily be entirely original.<sup>338</sup> Some of the most promising tools already have been debuted in progressive nations across the Atlantic Ocean.<sup>339</sup> However, any state-level legislation designed to spur offshore wind energy development needs to (1) cautiously streamline the permitting process for wind project applicants, (2) enhance the existing RPS by significantly raising the statewide renewable energy goal and incorporating additional market-based incentives to support project development, and (3) provide for the restructuring and modernization of the state's electric grid. By embracing the most promising elements of the modern European scheme into its existing regulatory framework, Wisconsin can honor its cherished motto<sup>340</sup> and seize on a singular opportunity to develop and implement the most innovative renewable energy system in the Great Lakes region.

MARVIN C. BYNUM II\*

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338. *New State Ice Co. v. Liebmann*, 285 U.S. 262, 311 (1932) (Brandeis, J., dissenting).

339. See discussion *supra* Parts II.A and IV.B.2.

340. "Forward." WIS. STAT. § 1.07 (2007–2008).

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