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Cooperative Federalism and Wind: A New Framework for Achieving Sustainability

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COOPERATIVE FEDERALISM AND WIND: A NEW FRAMEWORK FOR ACHIEVING SUSTAINABILITY

*Patricia E. Salkin**
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I. INTRODUCTION

Since taking office in January 2009, President Barack Obama has made energy independence a national priority, calling upon Americans to “confront[] our dependence on foreign oil, address[] the moral, economic and environmental challenge of global climate change, and build[] a clean energy future”¹ The President’s initiative comes in the wake of a year of unprecedented growth in wind energy development.² In 2008 alone the nation’s total wind energy generating capacity increased by over 50%, creating enough new generating capacity to serve over two million homes.³ The trend is expected to continue.⁴

The dramatic increase in generating capacity has been driven, in part, by the widespread adoption of state Renewable Portfolio Standards

1. Obama for America, Barack Obama and Joe Biden: New Energy for America, http://www.barackobama.com/pdf/factsheet_energy_speech_080308.pdf (last visited Jan. 20, 2010); see also WhiteHouse.gov, Energy & Environment, http://www.whitehouse.gov/agenda/energy_and_environment/ (last visited Jan. 20, 2010) (listing energy and environmental initiatives taken by President Obama).

2. See Ronald H. Rosenberg, *Diversifying America’s Energy Future: The Future of Renewable Wind Power*, 26 VA. ENVTL. L.J. 505, 515 (2008); Ronald H. Rosenberg, *Making Renewable Energy a Reality—Finding Ways to Site Wind Power Facilities*, 32 WM. & MARY ENVTL. L. & POL’Y REV. 635, 654-57 (2008) [hereinafter Rosenberg, *Making Renewable Energy*] (discussing the increased use of wind energy in recent years).

3. AM. WIND ENERGY ASS’N, 2008: ANOTHER RECORD YEAR FOR WIND ENERGY INSTALLATIONS 1 (2008), http://www.awea.org/pubs/factsheets/Market_Update_4Q08.pdf.

4. As of 2008, wind power installations in the United States operated at over 25,000 megawatts (“MW”), with an estimated increase of 5000 MW expected in 2009. AM. WIND ENERGY ASS’N, WIND: A LEADING SOURCE OF NEW ELECTRICITY GENERATION 3 (2009), http://www.awea.org/pubs/documents/Outlook_2009.pdf.

("RPS").⁵ A majority of states have mandatory RPSs that require "increasing percentages of electricity sold by utilities within each state [to] be produced from renewable sources including wind, solar, biomass and hydroelectric."⁶ For example, Oregon's Renewable Energy Act of 2007 requires the state's largest utilities to generate at least 5% of their electricity from renewable sources by 2011, increasing to 25% by 2025.⁷ To meet such RPS requirements, regulated utilities have focused primarily on wind energy.⁸

At the federal level, Congress continues to consider a number of RPS proposals designed to meet the goal set by the White House's New Energy for America plan.⁹ Although the specifics vary, these bills would require electric utilities to produce increasing percentages of their electricity from renewable sources, reaching approximately 25% by 2025.¹⁰ A recent poll found that Americans overwhelmingly support the enactment of a federal RPS.¹¹

With strong support at both the national and state levels, wind energy seems poised to continue its rapid growth. Yet, proposed wind energy projects sometimes falter at the local level, where land use decisions are typically made.¹² In opposing wind energy projects, local

5. RYAN WISER & GALEN BARBOSE, LAWRENCE BERKELEY NAT'L LAB., RENEWABLES PORTFOLIO STANDARDS IN THE UNITED STATES: A STATUS REPORT WITH DATA THROUGH 2007, at 3-5 (2008), available at <http://eetd.lbl.gov/ea/ems/reports/lbnl-154e-revised.pdf>.

6. See Rosenberg, *Making Renewable Energy*, *supra* note 2, at 636. For an updated map showing states with RPS, see generally PEW CTR. ON GLOBAL CLIMATE CHANGE, RENEWABLE ENERGY AND PORTFOLIO STANDARDS (2009), available at <http://www.pewclimate.org/sites/default/modules/usmap/pdf.php?file=5907>.

7. S. 74-838, Reg. Sess. (Or. 2007), available at <http://www.oregon.gov/ENERGY/RENEW/docs/sb0838.c.pdf>.

8. See WISER & BARBOSE, *supra* note 5, at 13. According to the study, "[o]f the more than 8,900 MW of new non-hydro renewable energy capacity that has come on line in RPS states from 1998 through 2007, roughly 93% has come from wind power . . ." *Id.* The authors note, however, that in some states there is "evidence that diversity may increase over time as RPS policies expand." *Id.* at 14.

9. A federal RPS has passed the Senate three times since 2002 and passed the House of Representatives once, in 2007, but has yet to be approved simultaneously by both houses. See *id.* at 34.

10. See, e.g., American Clean Energy & Security Act of 2009, H.R. 2454, 111th Cong. § 101 (2009); American Renewable Energy Act, H.R. 890, 111th Cong. § 2 (2009); Save American Energy Act, H.R. 889, 111th Cong. (2009); S. 433, 111th Cong. § 1 (2009); see also PATRICK SULLIVAN ET AL., NAT'L RENEWABLE ENERGY LAB., COMPARATIVE ANALYSIS OF THREE PROPOSED FEDERAL RENEWABLE ELECTRICITY STANDARDS 1, 2 tbl.1 (2009).

11. Press Release, Am. Wind Energy Ass'n, New Poll Shows Nationwide, Bipartisan Support for Renewable Electricity Standard (May 5, 2009), http://www.awea.org/newsroom/releases/New_Poll_Shows_Support_for_RES_050509.html.

12. In some states, however, these local decisions—particularly those dealing with wind energy—have been preempted by state-level decision makers. See *infra* Part III.A.

residents raise a host of concerns involving aesthetics, noise, safety and impacts on surrounding property values, wildlife, and the environment.¹³ Indeed, the intensity of local opposition has prompted one prominent energy siting consultant to remark that “wind energy is fast becoming ‘the mother of all NIMBY wars.’”¹⁴ NIMBY, an acronym for Not In My Backyard, is a term used to describe the reaction of local homeowners who object to further development within their community,¹⁵ fearing that such development might reduce the market value of their homes or change the character of the community.¹⁶

Though there are benefits to empowering local communities to regulate land use,¹⁷ in the context of wind energy more centralized regulation is desirable, and not entirely revolutionary. In fact, notwithstanding the localist nature of land use law, the federal government has long played a role in shaping land use policies.¹⁸ At

13. See *infra* Part III.B-C.

14. Marty Durlin, Op-Ed., *Wind Farms—Not In My Backyard*, RUIDOSO NEWS (N.M.), Mar. 19, 2009, at A4 (statement of Bob Kahn, head of Strategic Communications, a Seattle-based firm that helps wind farms gain siting permits).

15. See William A. Fischel, *Voting, Risk Aversion and the NIMBY Syndrome: A Comment on Robert Nelson's 'Privatizing the Neighborhood,'* 7 GEO. MASON L. REV. 881, 881, 884-85 (1999) (providing economic explanation for NIMBYism). According to Professor Fischel:

NIMBYs show up at the zoning and planning board reviews, to which almost all developers of more-than-minor subdivisions must submit. If NIMBYs fail to reduce the scale and density of the project at these reviews, they often deploy alternative regulatory rationales, such as environmental impact statements, historic districts, aboriginal burial sites, agricultural preservation, wetlands, flood plains, access for the disabled and protection of (often unidentified) endangered species at other local, state and federal government forums, including courts of law. . . . And if NIMBYs fail in these efforts, they seek, often by direct democratic initiatives, to have the local zoning and planning regulations changed to make sure that similar developments do not happen again.

Id. at 881.

16. Christopher Serkin, *Big Differences for Small Governments: Local Governments and the Takings Clause*, 81 N.Y.U. L. REV. 1624, 1656 (2006) (arguing that an account of NIMBYism “that focuses exclusively on market values or risk aversion misses important interests like the commitment members of a community may have to preserving its character, independent of any effect on property values”).

17. See *infra* text accompanying notes 216-17; see also William W. Buzbee, *Urban Sprawl, Federalism, and the Problem of Institutional Complexity*, 68 FORDHAM L. REV. 57, 93-94 (1999) (noting that local governments are better suited to regulate land use than are higher levels of government).

18. See Patricia E. Salkin, *Smart Growth and Sustainable Development: Threads of a National Land Use Policy*, 36 VAL. U. L. REV. 381, 382, 384-85, 388 (2002) (demonstrating the federal government’s promotion of sustainable development and arguing that “this is merely an extension of the historical federal interest and influence in land use policy”). See generally Shelby D. Green, *The Search for a National Land Use Policy: For the Cities’ Sake*, 26 FORDHAM URB. L.J. 69 (1998) (documenting federal laws and programs that affect state and local land use); Benjamin K. Sovacool, *The Best of Both Worlds: Environmental Federalism and the Need for Federal Action*

times, to further national goals, Congress has enacted federal legislation that directly constrains local siting authority.¹⁹ For example, the Energy Act of 2005 entirely preempts the local siting process,²⁰ granting the Federal Energy Regulatory Commission (“FERC”)²¹ exclusive siting authority for some electric transmission lines,²² and for all natural gas pipelines and terminals.²³ The Telecommunications Act of 1996 (“TCA”)²⁴ partially preempts local authority to site cellular communication towers. Specifically, the TCA’s Siting Policy (the “Telecommunication Siting Policy”)²⁵ leaves primary siting authority in the hands of local regulators, but places explicit substantive and procedural constraints on the decision-making process.²⁶

on *Renewable Energy and Climate Change*, 27 STAN. ENVTL. L.J. 397 (2008) (analyzing the federal role in environmental regulation).

19. See, e.g., Energy Act of 2005, 15 U.S.C. § 717b-1(b) (2006) (preempting local zoning of liquid natural gas terminals); Telecommunications Act of 1996, 47 U.S.C. 332(c)(7) (2006) (constraining local zoning process in siting of cell phone towers).

20. See *AES Sparrows Point LNG LLC v. Smith*, 470 F. Supp. 2d 586, 598 (D. Md. 2007) (finding that the Energy Act expressly preempts state and local action that would approve or deny siting liquefied natural gas terminals); see also Jacob Dweck et al., *Liquefied Natural Gas (LNG) Litigation After the Energy Policy Act of 2005: State Powers in LNG Terminal Siting*, 27 ENERGY L.J. 473, 481 (2006) (“Although the FERC generally conditions authorization on cooperation with state and local agencies, state and local laws that ‘prohibit or unreasonably delay’ the project are preempted.”); Kenneth T. Kristl, *Renewable Energy and Preemption: Lessons from Siting LNG Terminals*, NAT. RESOURCES & ENV’T, Winter 2009, at 58, 58-60 (describing how FERC preempts local law).

21. FERC “is an independent agency that regulates the interstate transmission of electricity, natural gas, and oil.” FERC, About FERC, <http://www.ferc.gov/about/ferc-does.asp> (last visited Jan. 16, 2010). FERC is not empowered to site energy *generating* facilities, such as wind farms.

22. 16 U.S.C. § 824p(a) (2006). Though FERC is not authorized to site generating facilities, such as wind energy facilities, it is authorized to site electric transmission lines in designated national interest electric transmission corridors. Areas qualify as “natural interest electric transmission corridors” if they are “experiencing electric energy transmission capacity constraints or congestion that adversely affects consumers.” *Id.* § 824p(a)(2). Under the legislation, FERC has the authority to consider an application and issue a permit to construct an energy transmission line “if the states either withhold approval for more than one year, do not have the authority to site transmission facilities, or cannot consider interstate project benefits of facilities proposed to be constructed in a National Corridor, or if a transmitting utility does not serve end users in a state” FED. ENERGY REGULATORY COMM’N, A GUIDE TO THE FERC ELECTRIC TRANSMISSION FACILITIES PERMIT PROCESS 5, available at <http://www.ferc.gov/for-citizens/citizen-guides/electric/guide-transmission.pdf>.

23. 15 U.S.C. § 717b-1(c) (authorizing FERC to approve the siting, expansion, and abandonment of interstate natural gas pipelines and storage facilities and to regulate the operation of liquid natural gas terminals).

24. 47 U.S.C. § 332 (2006).

25. *Id.* § 332(c).

26. See *infra* notes 224-230 and accompanying text (describing the decision-making process under the TCA).

The TCA's innovative combination of local control subject to federal limits has been described as "perhaps the most ambitious cooperative federalism regulatory program to date."²⁷ Unlike traditional notions of "dual federalism," which seek to delineate separate spheres of state and federal regulation,²⁸ "cooperative federalism" regulatory programs involve federal-state collaboration.²⁹ Cooperative federalism statutes typically outline the contours of a regulatory program and empower states to implement the program in accordance with federal guidelines.³⁰ Cooperative federalism thus strikes a functional balance between federal preemption on the one hand and decentralization on the other, harnessing "the benefits of diversity in regulatory policy within a federal framework."³¹

This Article proposes a federal wind siting policy modeled on the cooperative federalism framework of the Telecommunication Siting Policy. Part II describes some advantages of wind energy, focusing specifically on the environmental, economic, and social benefits. This Part also discusses several technical obstacles to wind energy development, including the need to supplement wind energy with conventional energy sources and the lack of adequate transmission infrastructure.

27. Philip J. Weiser, *Federal Common Law, Cooperative Federalism, and the Enforcement of the Telecom Act*, 76 N.Y.U. L. REV. 1692, 1694 (2001).

28. The concept of "dual federalism" often appears in Supreme Court federalism decisions. See, e.g., *Gregory v. Ashcroft*, 501 U.S. 452, 457 (1991) ("As every schoolchild learns, our Constitution establishes a system of dual sovereignty between the States and the Federal Government."); *Comty. Commc'ns Co. v. City of Boulder*, 455 U.S. 40, 53 (1982) ("Ours is a 'dual system of government' . . . There exist within the broad domain of sovereignty but [the states and the federal government].") (emphasis omitted) (citation omitted)); see also Erin Ryan, *Federalism and the Tug of War Within: Seeking Checks and Balance in the Interjurisdictional Gray Area*, 66 MD. L. REV. 503, 507-11, 537-65 (2007) (analyzing the current Court's "strict separationist" approach to federalism). See generally John C. Yoo, *Sounds of Sovereignty: Defining Federalism in the 1990s*, 32 IND. L. REV. 27 (1998) (discussing dual federalism in the modern context).

29. Nestor M. Davidson, *Cooperative Localism: Federal-Local Collaboration in an Era of State Sovereignty*, 93 VA. L. REV. 959, 966-67 (2007) ("Cooperative federalism . . . involves forms of collaboration between the federal government and the states."); see also William W. Buzbee, *Asymmetrical Regulation: Risk, Preemption, and the Floor/Ceiling Distinction*, 82 N.Y.U. L. REV. 1547, 1550 (2007) (describing cooperative federalism structures as multilayered regulatory schemes that involve federal, state, and local governments). See generally Kirsten H. Engel, *Harnessing the Benefits of Dynamic Federalism in Environmental Law*, 56 EMORY L.J. 159 (2006) (arguing that overlapping regulatory authority between the federal and state governments better enables both levels of government to address environmental issues).

30. Jonathan H. Adler, *Judicial Federalism and the Future of Federal Environmental Regulation*, 90 IOWA L. REV. 377, 384 & n.35, 385-87 (2005) (discussing cooperative federalism schemes); Weiser, *supra* note 27, at 1696-98.

31. Weiser, *supra* note 27, at 1695-96.

Part III assesses the current regulatory regime for the siting of wind turbines, reviewing general practices across the United States at both the state and local levels. Although a number of states have been active in providing wind siting guidance to local governments or preempting local control for large-scale wind energy facilities, a majority leave primary siting responsibility in the hands of local zoning boards. Part III then evaluates some of the most commonly raised local objections to wind siting, including concerns over aesthetics, wildlife, noise, safety, and property values.

Part IV presents an overview of the federal policies that impact the development of wind energy. Although numerous federal grants and tax incentives promote wind energy development, federal policies in this arena are largely uncoordinated and inefficient. Moreover, projects supported by federal dollars and regulatory policies may be unreasonably delayed or entirely prohibited by the local permitting process.

Part V proposes a federal regulatory regime for the siting of wind turbines, modeled on the Telecommunication Siting Policy. Specifically, this Part argues for a national wind siting regime that leaves primary siting authority in the hands of local zoning officials but places explicit federal constraints on the decision-making process. Such a regime would provide the regulatory uniformity necessary for this capital-intensive industry to fully develop, without sacrificing the benefits of local tailoring or experimentation. The Article concludes that such a national wind siting policy would strike an appropriate balance between local concerns regarding wind turbine siting and the national interest in developing wind as a renewable domestic energy source.

II. WHY WIND ENERGY

Recent fluctuations in the price of oil,³² together with stern warnings from the international scientific community identifying fossil fuel emissions as a primary cause of global warming,³³ have sparked a

32. See Energy Info. Admin., Gasoline and Diesel Fuel Update, <http://tonto.eia.doe.gov/oog/info/gdu/gasdiesel.asp?featureclicked=1&> (last visited Jan. 17, 2010); Energy Info. Admin., This Week in Petroleum, <http://tonto.eia.doe.gov/oog/info/twip/twip.asp> (last visited Jan. 17, 2010).

33. Robert Socolow et al., *Solving the Climate Problem: Technologies Available to Curb CO₂ Emissions*, ENV'T, Dec. 2004, at 8, 8, available at http://www.princeton.edu/~cmi/resources/CMI_Resources_new_files/Environ_08-21a.pdf (warning that high CO₂ emissions are "likely to be accompanied by significant global warming, rising sea level, increased threats to human health, more frequent extreme weather events, and serious ecological disruption."); see also INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, CLIMATE CHANGE 2007: SYNTHESIS REPORT

serious examination of wind energy as a viable source of renewable energy. Proponents of wind energy cite numerous advantages of wind compared to conventional sources of energy, including: (a) environmental benefits, such as reduced greenhouse gas emissions; (b) economic benefits, including price stability, job creation, and new sources of income for rural communities; and (c) national security benefits, achieved by reducing national reliance on foreign oil.³⁴ Despite the many advantages of wind energy, serious obstacles stand in the way of wind energy development, including the inconsistent nature of wind, inadequate transmission infrastructure, and, as Part III will discuss in more detail, local opposition to wind energy projects.

A. Environmental Benefits

Climate change and other environmental dangers have become increasingly important since the U.N. Intergovernmental Panel on Climate Change ("IPCC") concluded in 2007 that "[w]arming of the climate system is unequivocal," and "[o]bservational evidence from all continents and most oceans shows that many natural systems are being affected by regional climate changes, particularly temperature increases."³⁵ The IPCC report also made clear that human activities that produce greenhouse gas emissions have contributed significantly to global warming.³⁶

Concern over climate change has spurred interest in developing renewable energy, including wind energy. According to the U.S. Department of Energy ("DOE"):

Wind energy is one of the cleanest and most environmentally neutral energy sources in the world today. Compared to conventional fossil fuel energy sources, wind energy generation does not degrade the quality of our air and water and can make important contributions to reducing climate-change effects and meeting national energy security goals.³⁷

37 (2007), available at http://www.ipcc.ch/pdf/assessment-report/ar4/syr/ar4_syr.pdf [hereinafter IPCC].

34. Windustry, The Benefits of Wind Energy and Community Wind, <http://www.windustry.org/policy-amp-research/benefits-of-wind-and-community-wind/the-benefits-of-wind-energy-and-community-wi>; see also NAT'L RENEWABLE ENERGY LAB., U.S. DEP'T. OF ENERGY, WIND ENERGY BENEFITS 1-2 (2005), <http://www.nrel.gov/docs/fy05osti/37602.pdf>.

35. IPCC, *supra* note 33, at 30-31.

36. *Id.* at 37.

37. U.S. DEP'T. OF ENERGY, 20% WIND ENERGY BY 2030: INCREASING WIND ENERGY'S CONTRIBUTION TO U.S. ELECTRICITY SUPPLY 105 (2008), available at

Estimates indicate that wind projects completed in 2008 alone “will avoid nearly 44 million tons of carbon emissions, the equivalent of taking over 7 million cars off of the road.”³⁸

In addition to carbon emissions, wind energy production avoids emissions of other harmful pollutants, such as sulfur dioxide and nitrogen oxide, which cause acid rain, and particulate emissions that contribute to mercury contamination of lakes and streams.³⁹ Moreover, because wind energy does not need to be extracted from the earth, it avoids the harmful impacts of mining and transportation that are associated with the production of fossil fuels.⁴⁰

Wind energy also uses far less water than nuclear or fossil fuel power generation facilities.⁴¹ Despite the fact that water scarcity is a serious problem in some parts of the United States,⁴²

http://www.20percentwind.org/20percent_wind_energy_report_revOct08.pdf [hereinafter DOE REPORT]. The DOE estimates that “[s]upplying 20% of U.S. electricity from wind could reduce annual electric sector carbon dioxide (CO₂) emissions by 825 million metric tons by 2030.” *Id.* at 13; see also GLOBAL WIND ENERGY COUNCIL & GREENPEACE INT’L, GLOBAL WIND ENERGY OUTLOOK 2008, at 6 (2008), available at http://www.gwec.net/fileadmin/images/Logos/Corporate/GWEO_A4_2008_lowres.pdf (“Within three to six months of operation, a wind turbine has offset all emissions caused by its construction, to run virtually carbon free for the remainder of its 20 year life.”). For more information about the environmental benefits of wind energy, see EUR. WIND ENERGY ASS’N, WIND ENERGY—THE FACTS, ENVIRONMENT 167 (2009), available at http://www.ewea.org/fileadmin/ewea_documents/documents/publications/WETF/WETF.pdf.

38. AM. WIND ENERGY ASS’N, *supra* note 3. The Department of the Interior has similarly determined that “in 1990, California’s wind power plants offset the emission of more than 2.5 billion pounds of carbon dioxide and 15 million pounds of other pollutants that would have otherwise been produced. It would take a forest of 90 million to 175 million trees to provide the same air quality.” See Wind Energy Dev. Programmatic EIS, Frequently Asked Questions, <http://windeis.anl.gov/faq/> (last visited Jan. 20, 2010). In evaluating the Lempster wind project, the New Hampshire siting commission concluded that “[t]he Project will create no air emissions and thus will not have an adverse impact on air quality. In fact, it can reasonably be argued that the electricity produced by the Project will displace the use of fuels at other plants which do, in fact, negatively affect air quality.” STATE OF N.H. SITE EVALUATION COMM., DECISION ISSUING CERTIFICATE OF SITE AND FACILITY WITH CONDITIONS, Docket No. 2006-01, at 30 (2007), available at <http://www.puc.state.nh.us/Home/SEC%20Lempster%20Final%20Decision%206-28-07.pdf> [hereinafter SITE EVALUATION].

39. See Am. Wind Energy Ass’n, Wind Energy and the Environment, http://www.awea.org/faq/wwt_environment.html (last visited Jan. 18, 2010).

40. See Mass. Tech. Collaborative Renewable Energy Trust, Other Environmental Impacts of Fossil Fuels, <http://www.masstech.org/cleanenergy/important/envother.htm> (last visited Jan. 20, 2010) (describing the environmental impacts associated with extraction and transportation of fossil fuels, including groundwater contamination, contaminated mud releases, land subsidence, habitat disturbance, and transportation oil spills).

41. See Windustry, *supra* note 34.

42. See, e.g., Robert Glennon, *Water Scarcity, Marketing, and Privatization*, 83 TEX. L. REV. 1873, 1873-76 (2005) (“[T]he United States is heading toward a water scarcity crisis: our current water use practices are unsustainable, and environmental factors threaten a water supply heavily

few U.S. citizens realize that electricity generation accounts for nearly 50% of all water withdrawals in the nation, with irrigation withdrawals coming in second at 34%. Water is used for the cooling of natural gas, coal, and nuclear power plants and is an increasing part of the challenge in developing those resources.⁴³

The DOE estimates that “each megawatt-hour generated by wind could save as much as 600 gallons of water that would otherwise be lost to fossil plant cooling.”⁴⁴

B. Economic Benefits

In addition to its significant environmental advantages over conventional energy sources, the development of wind energy will also provide new jobs, create new sources of revenue for farmers and ranchers, and contribute to an increased local tax base for host communities.⁴⁵ The DOE estimates that “achieving the goals of the U.S. Department of Energy’s Wind Powering America program during the next 20 years will create \$60 billion in capital investment in rural America, provide \$1.2 billion in new income for farmers and rural landowners, and create 80,000 new jobs.”⁴⁶ According to one study,

burdened by increased demand.”); Neal Peirce, *The U.S. Not Immune to Global Water Crisis*, SEATTLE TIMES, Apr. 10, 2009, http://seattletimes.nwsources.com/html/opinion/2009020624_opinc12peirce.html (“Based on a Government Accountability Office report, there’s a real chance that 36 states will soon face water shortages through a combination of rising temperatures, population growth, urban sprawl, waste and excess.”).

43. DOE REPORT, *supra* note 37, at 16 (citations omitted).

44. *Id.* at 16-17.

45. See, e.g., U.S. DEP’T. OF ENERGY, WIND ENERGY FOR RURAL ECONOMIC DEVELOPMENT 3 (2004), available at <http://www.nrel.gov/docs/fy04osti/33590.pdf> [hereinafter WIND ENERGY FOR RURAL DEVELOPMENT]; see *In re UPC Vermont Wind, LLC*, 969 A.2d 144, 147-48 (Vt. 2009) (explaining how a proposed wind farm project would result in an economic benefit to the state and its residents); DOUG HOFFER, RENEWABLE ENERGY VERMONT, THE ECONOMIC BENEFITS OF WINDFARM DEVELOPMENT IN VERMONT 3-4 (2002), available at http://www.revermont.org/windfarm_benefits.pdf (discussing the projected positive economic benefits of windfarms in Vermont); NDSU Economist Says Wind Energy Has Positive Economic Benefits, N.D. STATE UNIV. AGRICULTURE COMM’N, Sept. 11, 2008, <http://www.ag.ndsu.edu/news/newsreleases/2008/sept-11-2008/ndsu-economist-says-wind-energy-has-positive-economic-benefits> (finding that wind development has positive economic effect).

46. WIND ENERGY FOR RURAL DEVELOPMENT, *supra* note 45, at 3. A study in Michigan determined that after passage of an RPS, the wind industry would generate

1,100 construction jobs per year for the next two decades . . . 3,010 permanent, continuing jobs related to the management and maintenance of wind installations by 2029; \$1.25 billion per year in construction-related new investments and spending over the next two decades; \$464 million in continuous annual spending in maintenance and management by 2010 and \$4.4 billion by 2029; \$21 million per year in new construction

wind energy produces 27% more jobs than coal plants and 66% more jobs than natural gas plants.⁴⁷ In addition, wind projects generate temporary construction jobs as well as long term operation and maintenance jobs.⁴⁸

Leasing and royalty agreements for the construction and operation of turbines can provide rural land owners with a significant source of extra income,⁴⁹ without interrupting normal ranching and farming activities.⁵⁰ Commercial scale wind projects benefit entire rural communities by generating substantial property tax revenues that can be used for building new schools, roads, bridges, and other community infrastructure.⁵¹ In Texas, for example, utilities and wind companies have invested \$1 billion in new wind power projects.⁵² According to the DOE,

wages for the next two decades; \$7.6 million in permanent annual wages by 2010 and \$96 million by 2029; [and] \$4.8 million in lease payments to landowners per year by 2010 and \$47 million per year by 2029.

Wind Development Carries Economic Benefits, Study Says, MICHIGAN FARM NEWS, Jan. 15, 2008, <http://www.michiganfarmbureau.com/farmnews/transform.php?xml=20080115/wind.xml>; see also Press Release, Am. Wind Energy Ass'n., Wind Energy Grows By Record 8,300 MW in 2008 (Jan. 27, 2009), http://www.awea.org/newsroom/releases/wind_energy_growth2008_27Jan09.html (noting that in 2008, wind turbine manufacturing resulted in 13,000 new direct jobs); John D. Sutter, *Growing Excitement, Expectations for Green Jobs Corps*, CNN.com, Feb. 27, 2009, <http://www.cnn.com/2009/LIVING/02/25/green.jobs.training/> (describing the growth of job opportunities in green industry).

47. WIND ENERGY FOR RURAL DEVELOPMENT, *supra* note 45, at 3.

48. *Id.*

49. See *id.* at 4 (“Although leasing arrangements vary widely, royalties are typically around \$2,000 per year for a 750-kilowatt wind turbine or 2% to 3% of the project’s gross revenues.”); see also Carolyn Kelly, *Big Wind Arrives in Michigan’s Thumb*, MICH. LAND USE INST., Apr. 9, 2006, <http://www.mlui.org/landwater/fullarticle.asp?fileid=17027> (describing economic and other benefits of wind energy).

50. See GLOBAL ENERGY CONCEPTS, ECONOMIC AND SOCIOECONOMIC IMPACTS OF UTILITY-SCALE WIND POWER PROJECTS 4 (2005), available at http://www.powernaturally.com/Programs/Wind/toolkit/20_economicandsocioeconomicimpacts.pdf (“Wind turbines occupy 4% or less of the land area required for a wind power project and because only a fraction of this land is utilized by physical plant structures and roads, the previous use of the land (e.g., ranching or farming) typically continues alongside the wind power facility.”); WIND ENERGY FOR RURAL DEVELOPMENT, *supra* note 45, at 4 (noting that because wind turbines have a small footprint, they minimally disturb the surrounding ranching and farming operations); Am. Wind Energy Ass’n., Wind Energy and Wildlife: If Not Wind, Then . . .?, http://www.awea.org/pubs/factsheets/Wind_Energy_and_Wildlife.pdf (last visited Jan. 17, 2010) (“[I]n places like upstate New York and Kansas, installing a wind project has allowed families to stay on farms and ranches, preserving the open space important to many species.”).

51. See, e.g., GLOBAL ENERGY CONCEPTS, *supra* note 50, at 5 (noting that property taxes and new jobs can help to revitalize rural areas by bringing in new revenue for towns and school districts); WIND ENERGY FOR RURAL DEVELOPMENT, *supra* note 45, at 4 (citing examples of communities benefiting from wind energy project tax revenues).

52. WIND ENERGY FOR RURAL DEVELOPMENT, *supra* note 45, at 4.

“The completed plants created 2,500 quality jobs with a payroll of \$75 million, will deliver \$13.3 million in tax revenue for schools and counties and pay landowners \$2.5 million in royalty income in 2002 alone. The multiplier effect of this new investment activity will stimulate another 2,900 indirect jobs in Texas.”⁵³

The economic benefits of wind power have, until recently, been outweighed by the prohibitive cost of wind energy generation as compared to other energy sources.⁵⁴ The gap, however, is beginning to close, with prices for wind energy per kilowatt hour falling from around eighty cents or more in the early 1980s to between six and nine cents today.⁵⁵ According to the DOE, “larger wind farms in windier areas are now considered economically competitive with ‘conventional’ fossil fuel power plants in many locations.”⁵⁶ Moreover, wind power may become more competitive as the costs of oil and natural gas increase.⁵⁷

53. *Id.* (quoting *Executive Summary* of PUB. CITIZEN TEX. STATE OFFICE & SUSTAINABLE ENERGY AND ECON. DEV. COAL., RENEWABLE RESOURCES: THE NEW TEXAS ENERGY POWERHOUSE (2002), available at <http://www.citizen.org/documents/Tx%20Energy%20Powerhouse.pdf>).

54. Rebecca Smith, *The New Math of Alternative Energy*, WALL ST. J., Feb. 12, 2007, at R1, available at <http://yaleglobal.yale.edu/display.article?id=8813>. Although the energy sources for renewable energy are usually free (e.g., wind and sun), they have historically been at a disadvantage because fossil fuel plants can rely on “billions of dollars in infrastructure investments and decades of know-how.” *Id.*

55. *Id.*; see also Windustry, *supra* note 34. According to a recent *New York Times* article, “[a] modern coal plant of conventional design, without technology to capture carbon dioxide before it reaches the air, produces at about 7.8 cents a kilowatt-hour; a high-efficiency natural gas plant, 10.6 cents; and a new nuclear reactor, 10.8 cents. A wind plant in a favorable location would cost 9.9 cents per kilowatt hour.” Matthew L. Wald, *Cost Works Against Alternative and Renewable Energy Sources in Time of Recession*, N.Y. TIMES, Mar. 29, 2009, at A18.

56. U.S. Dep’t. of Energy, *Wind Compared to the Cost of Other Electricity Generation Options*, http://www.windpoweringamerica.gov/ne_economics_compare.asp (last visited Jan. 20, 2010).

57. See EUR. WIND ENERGY ASS’N, WIND POWER ECONOMICS 5 (2003), http://www.ewea.org/fileadmin/ewea_documents/documents/press_releases/factsheet_economy2.pdf.

[A]lthough wind power might be more expensive than conventional power today, it may nevertheless take up a significant share in investors’ power plant portfolios as a hedge against volatile fossil fuel prices. The constancy of wind power costs justifies a relatively higher cost per kWh compared to the more risky future costs of conventional power due to volatile oil, coal and gas prices.

Id. at 8.

C. Energy Independence and National Security

The DOE estimates that “[a]lmost 60% of uncommitted natural gas reserves are in Iran, Qatar, and Russia”⁵⁸ and that actions by those countries, as well as competition from China, India, and other developing nations for energy resources could adversely affect the national economy.⁵⁹ In the past, changes in the supply of energy or the price of fuel have dramatically upset the national economy.⁶⁰ There is thus a “broad and growing recognition that the nation should diversify its energy portfolio so that a supply disruption affecting a single energy source will not significantly disrupt the national economy.”⁶¹ Indeed, since taking office in 2009, President Obama has made energy independence a top national priority.⁶²

One way to diversify the United States’ energy portfolio is to develop stable, domestic energy sources that do not rely on imported fuel.⁶³ Wind is particularly attractive in this regard because “wind requires no imported fuel, and the turbine components can be either produced on U.S. soil or imported from any friendly nation with production capabilities.”⁶⁴

Oil magnate T. Boone Pickens has been one of the most vocal proponents of increasing wind energy capacity in order to decrease national reliance on foreign energy. The Pickens Plan would boost wind power to 20% or more of the United States’ electric power needs, thereby freeing up natural gas for use as a transportation fuel.⁶⁵ The plan

58. DOE REPORT, *supra* note 37, at 18.

59. *Id.*

60. Economic vulnerability has been demonstrated “by the 1973 embargo imposed by the Organization of Arab Petroleum Exporting Countries; the 2000-2001 California electricity market problems; and the gasoline and natural gas shortages and price spikes that followed the 2005 hurricane damage to oil refinery and natural gas processing facilities along the Gulf Coast.” *Id.* at 17-18.

61. *Id.* at 17.

62. Obama for America, *supra* note 1 (noting that “our dependence on oil is one of the greatest [challenges] we have ever faced” and calling for a \$150 billion investment in renewable and alternative energy research and development).

63. DOE REPORT, *supra* note 37, at 18 (“[D]iversifying the electric generation mix with increased domestic renewable energy would . . . enhance national energy security by increasing energy diversity and price stability.”); *see also* NAT’L RENEWABLE ENERGY LAB., *supra* note 34, at 1.

64. DOE REPORT, *supra* note 37, at 18.

65. *Oil Billionaire Pickens Puts His Money on Wind Power*, CNN.com, July 8, 2008, <http://www.cnn.com/2008/TECH/science/07/08/pickens.plan/index.html?iref=newssearch>. *See generally* Pickens Plan, <http://www.pickensplan.com/about/> (last visited Jan. 17, 2010) (providing biographical information and a synopsis of the Pickens Plan).

would reduce the importation of foreign oil by a third, resulting in a savings of \$230 billion a year.⁶⁶

D. Challenges to Wind Energy Development

Despite the many advantages of wind energy relative to conventional forms of energy, several obstacles inhibit its widespread development, including the inconsistent nature of wind and insufficient transmission infrastructure.⁶⁷ First, unlike conventional energy sources, wind cannot be accessed on demand.⁶⁸ Instead, “[w]ind blows intermittently and occurs according to atmospheric conditions rather than human energy needs. . . . [W]ind does not always blow when energy is required and, in general, it cannot be stored for use later.”⁶⁹ Since constant and consistent energy is necessary for an energy grid to meet customers’ electricity demands, utilities must supplement wind generated electricity with conventional energy sources, such as oil or gas.⁷⁰

A second challenge to capturing wind energy lies in creating the infrastructure needed to transmit wind energy to the electricity grid.⁷¹ Areas of high wind power potential are often located in remote places, far from high capacity transmission lines.⁷² In these areas, new

66. *Id.*

67. See DOE REPORT, *supra* note 37, at 75.

68. See FED. ENERGY REGULATORY COMM’N, U.S. DEP’T OF ENERGY, DOCKET NO. AD04-13-000, STAFF BRIEFING PAPER: ASSESSING THE STATE OF WIND ENERGY IN WHOLESALE ELECTRICITY MARKETS 3-4 (2004), available at <http://www.ferc.gov/legal/maj-ord-reg/land-docs/11-04-wind-report.pdf>; DOE REPORT, *supra* note 37, at 75 (noting that one challenge to wind energy development “lies in the need to reliably balance electrical generation and load over time when a large portion of energy is coming from a variable power source such as wind, which, unlike many traditional power sources, cannot be accessed on demand . . .”).

69. Rosenberg, *Making Renewable Energy*, *supra* note 2, at 665.

70. See DOE REPORT, *supra* note 37, at 75 (“To accommodate a nondispatchable variable source such as wind, operators must ensure that sufficient reserves from other power sources are available to keep the system in balance.”). See generally John Etherington, *Wind Power—“Variable” or “Intermittent?” A Problem—Whatever the Word*, MOORESDE ACTION GROUP (2006), <http://www.moorsydeactiongroup.org.uk/dnload/intermit.doc> (discussing the intermittent nature of wind energy and the necessity for conventional backup energy systems).

71. DOE REPORT, *supra* note 37, at 75 (“The other challenge is to plan, build, and pay for the new transmission facilities that will be required to access remote wind resources.”); Editorial, *Wyō Wind Farms Need Consistent Regulations*, CASPER STAR TRIB., July 5, 2009, http://www.trib.com/news/opinion/editorial/article_d5bfc6a6-36e9-5601-a8e0-3f0991292c7d.html (describing obstacles to wind energy development in Wyoming, including “a lack of electrical transmission lines”).

72. See Rosenberg, *Making Renewable Energy*, *supra* note 2, at 666; see also Shalini P. Vajjhala, *Siting Difficulty and Renewable Energy Development: A Case of Gridlock?*, RESOURCES,

transmission lines must be constructed to link wind turbines to the utility power grid.⁷³ Indeed,

[t]he high costs of this new connective infrastructure can create serious obstacles for wind power projects. Even if they are able to connect, remotely located wind power sources may be charged high access fees to use the transmission lines. Furthermore, these lines may have limited transmission capacity which may have been allocated on a first-in-time principle having a discriminatory effect on new power generators like wind farms.⁷⁴

In addition to the energy generation and transmission problems raised in this Section, the next Part focuses on yet a third challenge to developing wind energy—overcoming local opposition to siting wind turbines.

III. LOCAL GOVERNMENTS AND THE SITING OF WIND TURBINES

According to the DOE, “[t]he United States has enough wind resources to generate electricity for every home and business in the nation.”⁷⁵ The DOE has mapped and classified the nation’s land area in terms of its wind power potential.⁷⁶ Several Midwestern states, including but not limited to parts of Montana, North Dakota, South Dakota, Wyoming, Nebraska, Kansas, Oklahoma, and Texas, are particularly rich in wind energy potential.⁷⁷ Coastal areas are similarly well suited for commercial wind farms.⁷⁸

Wind power receives overwhelming public support in national surveys. One recent poll found that 75% of voters favor the adoption of a

Winter 2007, at 5, 5, available at http://www.rff.org/rff/News/Features/upload/26477_1.pdf (“Because renewable resources are so often confined to remote locations, in many cases they also require new electric transmission lines to ship power to areas where it is needed.”).

73. Rosenberg, *Making Renewable Energy*, *supra* note 2, at 666.

74. *Id.* (citations omitted).

75. U.S. Dep’t. of Energy, Wind Energy Resource Potential, http://www1.eere.energy.gov/windandhydro/wind_potential.html (last visited Jan. 17, 2010) [hereinafter Wind Energy Resource Potential].

76. *Id.* Although wind is available in all fifty states, only select areas of high wind density have the potential for energy production on a commercial scale. Small wind systems (those with capacities of 100 kW and under) that are used mainly to power homes and businesses may be sited in a wider variety of locations. See AM. WIND ENERGY ASS’N, AWEA SMALL WIND TURBINE GLOBAL MARKET STUDY: YEAR ENDING 2008, at 3-4 (2009), available at http://www.awea.org/smallwind/pdf/09_AWEA_Small_Wind_Global_Market_Study.pdf.

77. See Wind Energy Resource Potential, *supra* note 75.

78. See *id.*

federal RPS.⁷⁹ Another poll found that 77% of people would like the government to increase the financial support and incentives it gives for producing energy from alternative sources such as wind and solar power,⁸⁰ and that 64% of people would be willing to pay higher taxes on gasoline and other fuels if the money was used to research renewable energy sources.⁸¹

Despite the tremendous support expressed in national polls, energy projects often face intense opposition at the local level.⁸² Although a number of states have created state-wide siting guidelines or procedures,⁸³ many others rely on traditional local zoning to site wind energy facilities.⁸⁴ Thus, in many states another major obstacle to developing wind energy is overcoming community opposition to siting wind turbines.

This Part provides an overview of state approaches to wind siting and evaluates local concerns surrounding the issue. Section A describes state siting regimes. Section B highlights several of the most commonly expressed local objections to wind turbines. Section C evaluates the legitimacy of these objections, and concludes that though many local concerns are valid, they generally do not outweigh the national interest in developing wind energy.

79. Press Release, Am. Wind Energy Ass'n, *supra* note 11. The poll further determined that support for a national RPS is bi-partisan, with 86% of Democrats, 71% of independents, and 62% of Republicans favoring the RPS. *Id.*

80. Jeffrey M. Jones, *Americans on Energy: Promote Both New Sources and Old*, GALLUP, Mar. 13, 2009, <http://www.gallup.com/poll/116713/americans-energy-promote-new-sources-old.aspx>.

81. N.Y. TIMES & CBS NEWS, POLL: APRIL 20-24, 2007, at 11 (2007), *available at* http://graphics8.nytimes.com/packages/pdf/national/20070424_poll.pdf.

82. *See, e.g.*, Mark Clayton, *Before the Wind, Come the Lines*, CHRISTIAN SCI. MONITOR (Boston), Feb. 19, 2009, at 13; Durlin, *supra* note 14 (describing local opposition in New Mexico); Dan Herrera, *Wind Energy Is About More Than the View*, ALBUQUERQUE J., Dec. 13, 2008, at A1 (same); Kevin Miller, *Towns Keep Control Over Wind, Water*, BANGOR DAILY NEWS, Mar. 20, 2009, <http://www.bangordailynews.com/detail/101906.html> (describing NIMBY reaction in Maine); Danielle Ulman, *Emotions Run High in Windfarm Debate: 40-Story Turbines in Western Maryland?*, MD. DAILY REC., Feb. 1, 2008, *available at* <http://www.windaction.org/news/13945> (describing "emotional pleas" to stop wind turbines from being sited in state forest).

83. *See* NAT'L WIND COORDINATING COMM. & NAT'L CONFERENCE OF STATE LEGISLATURES, STATE SITING AND PERMITTING OF WIND ENERGY FACILITIES, at i (2006), *available at* http://www.nationalwind.org/publications.siting/Siting_Factsheets.pdf.

84. *See id.*

A. Approaches to Wind Energy Siting

In the United States, land use regulation has traditionally been a function of local governments.⁸⁵ Thus, in many states, local zoning authorities are primarily responsible for approving and siting wind farms and other energy facilities.⁸⁶ As a result, the process for obtaining a wind siting permit varies not only between states, but also within each state. For example, in Iowa, where local governments are charged with siting wind turbines,⁸⁷ “siting guidelines and application procedures vary across the state.”⁸⁸ Other states in which wind turbine siting is under the aegis of local governments include New York,⁸⁹ Texas,⁹⁰ Idaho,⁹¹ Utah,⁹² and Illinois.⁹³

85. Ashira Pelman Ostrow, *Judicial Review of Local Land Use Decisions: Lessons from RLUIPA*, 31 HARV. J.L. & PUB. POL’Y 717, 720 (2008) (citations omitted).

86. See, e.g., NAT’L WIND COORDINATING COMM., *supra* note 83, at 2-3, 6-7.

87. *Id.* at 2 (“For projects located outside city limits, county boards of supervisors will have jurisdiction. Within city limits, local city planning offices will have established planning and zoning ordinances.”). See also Iowa Dep’t of Natural Res., Wind Energy and Wildlife Resource Management in Iowa: Avoiding Potential Conflicts, http://www.iowadnr.gov/wildlife/diversity/files/wind_wildliferecs.pdf (last visited Jan. 17, 2010) (“Iowa currently exercises minimal regulation on locating wind farms.”).

88. Iowa Dep’t of Natural Res., *supra* note 87. In lieu of statewide coordination or planning, “[a]n *ad hoc* Iowa wind energy and wildlife discussion group has met infrequently to review current developments regarding wind energy and wildlife interactions. . . . The group has no rule-making or regulatory authority; rather it simply works cooperatively to discuss mutual concerns and to learn of the latest developments.” *Id.*

89. The New York State Association of Towns 2009 Legislative Resolution calls upon the governor, state legislature and state agencies “to develop new laws and regulations that will preserve local authority over the siting of [wind farms.]” NEW YORK STATE ASS’N OF TOWNS, 2009 LEGISLATIVE RESOLUTIONS 5 (2009), available at <http://www.nytowns.org/core/contentmanager/uploads/2009%20Legislative%20Program.pdf>.

90. See SUSAN COMBS, TEX. COMPTROLLER OF PUB. ACCOUNTS, THE ENERGY REPORT 174 (2008), available at <http://www.window.state.tx.us/specialrpt/energy/pdf/11-WindEnergy.pdf> (“In Texas, there are no state guidelines for wind turbine siting. Counties can discourage but cannot prohibit power plant development. The Texas Parks and Wildlife Department will review a wind energy project against a draft set of guidelines for wildlife protection, if asked. The 2007 Texas Legislature considered a bill—HB 2794—that would have required a permitting process for wind energy projects, but it did not pass.”) (citations omitted).

91. See ASS’N OF FISH & WILDLIFE AGENCIES & U.S. FISH & WILDLIFE SERV., DEP’T OF THE INTERIOR, WIND POWER SITING REGULATIONS AND WILDLIFE GUIDELINES IN THE UNITED STATES 14 (2007), <http://www.batsandwind.org/pdf/afwastsitsum.pdf> [hereinafter SITING REGULATIONS REPORT] (“Wind power [in Idaho] is currently unregulated at any level of government—local zoning may impact siting but this is variable.”).

92. *Id.* at 46 (“There is no single Utah State government agency with primary responsibility for electric generation plant siting. Public Service Commission of Utah, Utah Division of Public Utilities and many others are included in the list and it is the developer’s responsibility to contact each agency to determine the necessary requirements for the specific proposed project.”).

93. 55 ILL. COMP. STAT. ANN. 5/5-12020 (West 2005) (establishing wind farm regulations for counties); 65 ILL. COMP. STAT. ANN. 5/11-13-26 (West 2005) (establishing wind farm regulations

Several other states have developed voluntary guidelines or model ordinances for use by local governments.⁹⁴ For example, in 2007, the Wisconsin Task Force on Wind Siting Reform promulgated a model wind siting ordinance for use by Wisconsin towns and counties.⁹⁵ Similarly, in Kansas, the state Energy Council issued a *Wind Energy Siting Handbook*, which offers “voluntary guideline options for Kansas cities and counties to consider in response to possible wind energy developments in their areas.”⁹⁶ The handbook encourages, but does not require, local officials to adopt standards in a number of common areas of concern, including land use management, noise management, protection of natural and biological resources, soil erosion and water quality, visual impact, safety, and community outreach.⁹⁷

In another group of states, the authority to site wind projects is split based on the size of the project, with a state agency charged with siting larger scale wind energy facilities, and local zoning authorities charged with siting smaller scale projects.⁹⁸ For example, in New Hampshire,

for municipalities); *see also* 4 PATRICIA E. SALKIN, AMERICAN LAW OF ZONING § 37:9, at 54.1 (5th ed., 2009) (“Counties and municipalities in Illinois may establish standards for wind farms and electric-generating wind devices . . .”).

94. *See* NAT’L WIND COORDINATING COMM., *supra* note 83, at ii.

95. Indus. Wind Action Group, Wisconsin Model Wind Ordinance for Towns/Counties, <http://www.windaction.org/documents/13190> (last visited Jan. 17, 2010).

96. KAN. ENERGY COUNCIL, WIND ENERGY SITING HANDBOOK: GUIDELINE OPTIONS FOR KANSAS CITIES AND COUNTIES 2 (2005), http://kec.kansas.gov/reports/wind_siting_handbook.pdf. Kansas’s handbook explicitly recognizes that

[t]he authority to regulate land use in Kansas is under the purview of local governments through the state’s planning and zoning statutes. The statutes outline how land-use regulations are to be accomplished at the local level, and the state generally does not engage in their enactment, administration, or enforcement.

Id. at 3 (citation omitted).

97. *Id.* at 6-9. A Kansas bill currently under consideration would preempt all local regulations “restricting or prohibiting the use of any wind turbine or any other equipment used for wind power . . .” H.R. 2043, 2009 Leg., Reg. Sess. § 19(a) (Kan. 2009), *available at* <http://www.kslegislature.org/bills/2010/2043.pdf>. The Kansas Association of Counties has opposed the Bill given that it “fundamentally strips counties (and cities) of the most basic right to regulate land use within their jurisdictions.” *Establishing the Net Metering and Easy Connection Act for Wind Generation: Hearing on H.R. 2043 Before the H. Energy and Util. Comm.*, 2009 Leg., Reg. Sess. 3 (Kan. 2009) (statement of Randall Allen, Exec. Director, Kansas Association of Counties), *available at* <http://www.kslegislature.org/committeeminutes/09-10/house/hengery/20090129hEnergy.pdf>.

98. *See* NAT’L WIND COORDINATING COMM., *supra* note 83, at ii; *see also* MINN. STAT. ANN. § 216F.04(a)-(b) (West 2003) (requiring a site permit from the state public utilities commission for wind energy conversion systems with a capacity of more than 5000 kilowatts); OHIO ADMIN. CODE 4906-5-01 to -02 (2009) (requiring approval from the state power siting board for major utility facilities with a capacity of more than fifty MW); *see also* Residents Opposed to Kittitas Turbines v. State Energy Facility Site Evaluation Council, 197 P.3d 1153, 1168-69 (Wash. 2008)

local governments have siting authority for small wind energy projects used primarily for on-site generation,⁹⁹ while projects with more than thirty MW of capacity fall under the purview of the New Hampshire Site Evaluation Committee.¹⁰⁰ In Connecticut, a state Siting Council regulates the siting of all renewable energy facilities greater than one MW.¹⁰¹ State siting requirements typically focus on issues of common concern, including requirements for aesthetics, setbacks, noise levels, safety, and shadow flicker.¹⁰² State siting agencies may also require developers to undergo environmental impact assessments and to solicit and respond to concerns of the local community.¹⁰³

B. Wind Energy Meets the Neighbors

Although a growing number of states have become active in regulating wind siting, a substantial number leave siting power in the

(holding that State Energy Siting Law applies to wind turbines and preempts local zoning in Washington State).

99. N.H. REV. STAT. ANN. §§ 674:62-:66 (West 2008).

100. See N.H. REV. STAT. ANN. § 162-H:2 (West 2002) (defining “bulk power supply facilities” to include electric generation plants operating at a capacity of thirty MW or more); N.H. REV. STAT. ANN. § 162-H:5 (West 2002) (requiring any bulk power facility to obtain a certificate from the Site Evaluation Committee); GOVERNOR’S OFFICE OF ENERGY & CMTY. SERVS., NEW HAMPSHIRE ENERGY PLAN §§ 4.2-4.3 (2002), available at <http://www.nh.gov/oep/programs/energy/documents/Ch204.pdf>. The New Hampshire law expressly provides that “[o]rdinances or regulations adopted by municipalities to regulate the installation and operation of small wind energy systems shall not unreasonably limit such installations or unreasonably hinder the performance of such installations.” N.H. REV. STAT. ANN. § 674:63. The statute further provides that unreasonable limitations include: excluding of wind turbines from a municipality; using a generic ordinance to restrict tower height; requiring setbacks greater than 150% of a turbine’s height; setting noise limits lower than fifty-five decibels; and fixing electrical and structural standards that are more restrictive than applicable state and federal building and electrical codes. *Id.*

101. CONN. GEN. STAT. ANN. §§ 16-50(g) to -50(k) (West 2007) (establishing the Connecticut Siting Council to regulate all electric generators over one MW).

102. See, e.g., MINN. R. 7854.0500 (2009) (providing that the application must include detailed information about the project, including information about the proposed site, plans for construction, costs, and environmental impact); OHIO ADMIN. CODE 4906-17-08 (2009), available at <http://codes.ohio.gov/oac/4906-17-08> (providing an extensive list of social and ecological impacts of the proposed site that must be provided by the applicant); CONN. SITING COUNCIL, APPLICATION GUIDE FOR AN ELECTRIC GENERATING FACILITY 5-6 (2009), http://www.ct.gov/csc/lib/csc/guides/guidesonwebsite0308/elec_gen_application_guide_20090113135115.pdf#31223 (stating that an application for an electric generating facility must fully describe facility, including service life and capacity, waste disposal, noise abatement, provisions for emergency operations and shutdowns, and traffic safety).

103. See, e.g., MINN. R. 7854.0900. The Minnesota rule also provides for some amount of local participation in the siting process. Affected landowners and local governments receive a copy of permit applications and have at least thirty days to submit comments. *Id.* The state then holds a public comment meeting for each application, and may hold a contested case meeting if requested by the public. *Id.*

hands of local planning and zoning boards and local legislatures. While some communities welcome wind farms,¹⁰⁴ and some wind developers have been able to overcome local opposition through community outreach and education,¹⁰⁵ local opposition to wind turbines, often labeled NIMBYism,¹⁰⁶ is common.¹⁰⁷ In fact, some communities have adopted moratoria on siting wind turbines after project developers expressed interest in the areas.¹⁰⁸

104. See *New York Residents Near Big New York Wind Farm Support Wind Energy: Study*, WIND ENERGY WKLY. (Am. Wind Energy Ass'n, Wash. D.C.), Apr. 3, 2009, at 1, available at http://www.awea.org/newsroom/pdf/NY_Residents_Support_Wind_Energy_in_Study_03Apr09.pdf (reporting that 79% of residents want more wind farms in the county and 70% believe wind farms positively impact the community); Tom Standard, *Wind Power Generates Interest in Sumner*, SUN J. (N.Y.), Apr. 3, 2009, available at <http://www.windaction.org/news/20589> (describing local support for studying wind farm development); Nate Sunderland, *Madison County In Line for Wind Turbine Ordinance*, STANDARD J. (Idaho), Apr. 3, 2009, <http://rexburgstandardjournal.com/articles/2009/04/04/news/20.txt> (explaining that an ordinance permitting small wind turbines was enacted in response to residents' desires to build such turbines).

105. A notable example is the Bluewater wind farm development being planned off the shore of Delaware. See Mark Svenvold, *Wind-Power Politics*, N.Y. TIMES, Sept. 12, 2008, <http://www.nytimes.com/2008/09/14/magazine/14wind-t.html?pagewanted=1&r=1>. To head off local opposition, Bluewater hired consultants to prepare visual models of what the wind farm would look like and to respond to concerns about bird kills and wind availability. *Id.* The company held public meetings, and its director of communications regularly appeared on a local talk show to respond to the community's questions about wind turbines and to explain why wind power was preferable to coal and natural gas. *Id.* Eventually, when the Public Service Commission solicited comments, they came in ten to one in favor of Bluewater's project. *Id.* A poll taken by the University of Delaware showed that 91% of Delaware residents supported the proposal. *Id.* Even the coastal tourist towns that relied on the view more than other parts of the state came to support the project. See *id.*; see also University of Delaware, College of Earth, Ocean, and Environment, Offshore Wind Power: Delaware Offshore Wind Project, <http://www.ocean.udel.edu/Windpower/deproject.html> (last visited Jan. 18, 2010).

106. See *supra* notes 15-16.

107. See Robert D. Kahn, *Siting Struggles: The Unique Challenge of Permitting Renewable Energy Power Plants*, ELECTRICITY J., Mar. 2000, at 21, 26 (describing NIMBY opposition to the Kenetech Windpower project in the early 1990s, where residents from over thirty miles away complained about "visual pollution"); Mark Clayton, *America's Future Wind Web?*, CHRISTIAN SCI. MONITOR, Feb. 18, 2009, <http://features.csmonitor.com/innovation/2009/02/18/americas-future-wind-web/> (describing local opposition to transmission lines); Op-Ed., *Wind Power, Rhetoric*, TIMES-UNION (Albany, N.Y.), Oct. 8, 2008, at A10 (describing NIMBY opposition to wind energy project in upstate New York). On Long Island, a citizen group known as the Jones Beach Ad Hoc Committee was formed to prevent the installation of forty offshore wind turbines. See Save Jones Beach Ad Hoc Committee, <http://www.savejonesbeach.org/who-we-are.html> (last visited Jan. 20, 2010); see also Mark Harrington, *Green vs. Green*, NEWSDAY (Long Island, N.Y.), Aug. 29, 2007, at A43 (discussing recommended postponement of the Long Island Power Authority offshore project for cost reasons).

108. See, e.g., *Ecogen, LLC v. Town of Italy*, 438 F. Supp. 2d 149, 152, 162 (W.D.N.Y. 2006) (upholding moratorium on wind turbines enacted after producer sought to build twenty-three turbines in town); *Zimmerman v. Bd. of Comm'rs of Wabaunsee County*, 218 P.3d 400, 405 (Kan. 2009) (town enacted moratorium on wind farms after being contacted by a wind farm company that was interested in building wind farms in the county); *Emerging Energies, LLP v. Manitowoc*

In opposing wind projects, NIMBYs raise a variety of concerns regarding the impact of wind turbines on property values, noise, aesthetics, health and safety, and wildlife preservation.¹⁰⁹ All of these concerns were raised by the now infamous opponents of the Cape Wind project, which is being developed off the coast of Nantucket, Massachusetts.¹¹⁰ Critics of the project, including Robert F. Kennedy Jr.,

County, No. 2008AP1508, 2009 Wisc. App. LEXIS 149, at *1 (Wis. Ct. App. Mar. 4, 2009) (town enacted moratorium one month after energy company applied for conditional use permit to build a seven turbine wind energy system); Bob Clark, *Hartsville Blocks Wind*, EVENING TRIB. (Hornell, N.Y.), Feb. 27, 2009, <http://www.eveningtribune.com/news/business/x1959828903/Hartsville-blocks-wind> (reporting that the Hartsville Town Board approved a one-year moratorium on wind power development to study noise, the effect of turbines on property values, and the possible benefits to the town); Miller, *supra* note 82 (“Jackson is one of several communities where residents have passed moratoriums on large-scale wind power facilities after project developers expressed interest in the area.”); Jim Planck, *Town Adds 6 Months to Wind Turbine Moratorium*, DAILY MAIL (U.K.), Feb. 21, 2009, available at <http://www.windaction.org/news/20110> (reporting that in the town of Hunter, New York, a moratorium granted the year before was extended for another six months); *Thorndike: Voters Address Selectmen, Wind-Turbine Moratorium*, PORTLAND PRESS HERALD (Maine), Mar. 22, 2009, <http://pressherald.maine.com/story.php?id=246320&ac=> (explaining that residents of Thorndike, Maine, voted to adopt a six-month moratorium on wind turbines); John E. Usalis, *Butler Halts Windmills*, REPUBLICAN HERALD (Pa.), Apr. 22, 2009, <http://www.republicanherald.com/news/1.4460> (discussing a wind moratorium enacted after a twenty-seven wind turbine project was proposed). Other communities, however, have rejected moratoria, sensing that these initiatives are more often fueled by anti-wind sentiments than by genuine intentions to study the impacts of wind turbines. See, e.g., Nick Sambides, Jr., *Lincoln Board Decides Against Wind Moratorium*, BANGOR DAILY NEWS, Oct. 22, 2008, at B2 (indicating that board members decided to reject a wind moratorium because they believed that it was their responsibility to gain the requisite experience with turbines to conduct proper land use reviews, rather than simply delaying doing so through a moratorium); Julia Bayly, *Fort Kent Council Refuses Wind Moratorium*, BANGOR DAILY NEWS, Feb. 9, 2009, <http://www.bangordailynews.com/detail/99259.html> (explaining that the town council rejected a citizen moratorium petition because it was concerned that a moratorium would give the town an “anti-wind power reputation” and scare off investment from commercial wind companies).

109. See, e.g., *Ecogen*, 438 F. Supp. 2d at 153 (involving the town board’s imposition of a six-month moratorium on the construction of wind turbines because it was concerned that wind turbines would decrease property values and negatively impact the aesthetics of the town); *In re Halnon*, 811 A.2d 161, 162 (Vt. 2002) (concerning residents who opposed their neighbors’ application to erect a wind turbine for aesthetic reasons, complaining that their property looked down on the proposed turbine site); *Burch v. Nedpower Mount Storm, LLC*, 647 S.E.2d 879, 885 (W.Va. 2007) (involving a group of homeowners living near a proposed wind farm site who alleged that the wind farm would constitute a nuisance because it would cause noise, light flicker, and “potential danger from broken blades, ice throws, and collapsing towers”); Miller, *supra* note 82 (noting that residents complain of “loss of enjoyment of their homes, sleep deprivation from noise caused by the spinning blades, lower property values and even sickness caused by low-frequency noise or vibrations,” and that “turbines ruin scenery important to tourism and can harm wildlife”).

110. See Cape Wind, America’s First Offshore Wind Farm on Nantucket Sound, Project at a Glance, <http://www.capewind.org/article24.htm> (last visited Jan. 20, 2010). One hundred and thirty turbines will be located in Nantucket Sound, between 3.8 and 13.8 miles from land. Each turbine will have the capability of producing 3.6 MW of electricity, which in total would provide the citizens of Massachusetts with a maximum of 454 MW of clean, renewable energy. MINERALS

an environmental lawyer, the late Senator Ted Kennedy, and former Governor Mitt Romney, formed the Alliance to Protect Nantucket Sound, a non-profit group dedicated to preserving the landscape off Cape Cod.¹¹¹ The Alliance took the almost classically NIMBY position of supporting wind power, but opposing the Cape Wind plant in Nantucket Sound due to its “potential adverse economic, environmental and public safety impacts.”¹¹²

In a controversial op-ed piece in the *New York Times*, Robert Kennedy, whose family’s famous vacation compound on Martha’s Vineyard is located in Nantucket Sound, stated:

As an environmentalist, I support wind power, including wind power on the high seas. I am also involved in siting wind farms in appropriate landscapes, of which there are many. But I do believe that some places should be off limits to any sort of industrial development. I wouldn’t build a wind farm in Yosemite National Park. Nor would I build one on Nantucket Sound, which is exactly what the company Energy Management is trying to do with its Cape Wind project.¹¹³

Despite the opposition, in January 2009, after years of hearings and studies, the U.S. Minerals Management Service (“MMS”) issued an extensive final environmental impact statement strongly approving the Cape Wind project and finding that the Cape Wind plant would have little lasting effects on wildlife, navigation, or tourism.¹¹⁴ Yet, the

MGMT. SERVS., U.S. DEP’T OF THE INTERIOR, CAPE WIND ENERGY PROJECT: FINAL ENVIRONMENTAL IMPACT STATEMENT §§ 1.1, 2.1.1 (2009), *available at* <http://www.mms.gov/offshore/AlternativeEnergy/PDFs/FEIS/CapeWindEnergyProjectFEIS.pdf>.

111. Alliance to Protect Nantucket Sound, About Us, http://www.saveoursound.org/site/PageServer?pagename=About_Us_Mission (last visited Jan. 18, 2010); *see also* Charles Kleekamp, *Yet Another Ploy Against Cape Wind*, PROVIDENCE J., Jan. 19, 2009, http://www.projo.com/opinion/contributors/content/CT_kleekamp19_01-19-09_SACUOSG_v19.427cded.html (describing ongoing opposition to Cape Wind project).

112. Alliance to Protect Nantucket Sound, *supra* note 111.

113. Robert F. Kennedy, Jr., Op-Ed., *An Ill Wind Off Cape Cod*, N.Y. TIMES, Dec. 16, 2005, at A41. Members of the media immediately attacked Kennedy for failing to disclose his personal interest in the Cape Wind project. *See, e.g.*, If Not There . . .?, <http://energyoutlook.blogspot.com/2005/12/if-not-there.html?fta=y> (Dec. 16, 2005, 09:00 EST) (highlighting the NIMBYist sentiment underlying Kennedy’s op-ed piece); RFK Jr. Under ‘Fire’: NYT Op-Ed Angers Liberals, Conservatives, <http://radioequalizer.blogspot.com/2005/12/air-america-host-kennedys.html?fta=y> (Dec. 17, 2005, 12:22 EST) (“After all, in such a forceful, high-profile denunciation of the proposed Cape Wind power project in Cape Cod, Mass., wouldn’t it be proper to point out the Kennedy family’s clear conflict of interest? Shouldn’t readers know the proposed wind farm project would sit directly facing their Hyannisport compound, several miles out to sea?”).

114. *See* Cape Wind Energy Project, 74 Fed. Reg. 3635 (Jan. 21, 2009); MINERALS MGMT. SERVS., *supra* note 110, § 6.

developers of Cape Wind have been forced “to navigate through a gauntlet of permit-related hurdles,” leading the U.S. Chamber of Commerce to observe that Cape Wind “is perhaps the nation’s most infamous example of the horrors of NIMBY.”¹¹⁵

C. Evaluating Local Concerns

NIMBYs pose a problem, of course, for all power generating facilities, which tend to be large projects with significant impacts on neighboring landowners. But they pose particular challenges for wind energy facilities. Unlike conventional fossil fuel power facilities, which are generally sited in industrial areas, wind turbines are often located in remote, undeveloped places, and they may experience more NIMBYism because of this.¹¹⁶ As siting consultant Robert Khan explains, “[a] project which fits into a preexisting industrial mold is not likely to be accused of ruining the landscape. A renewable energy project is not as lucky. Americans put a high value on wilderness and open space. Sparks fly when lands viewed as public viewsapes . . . appear threatened.”¹¹⁷

Moreover, when environmental groups oppose wind energy projects, their criticisms may be given more weight than when they challenge fossil fuel powered facilities. “For a public official, hearing environmentalists savage renewable projects is like witnessing a family feud. Decision makers expect environmental opposition to thermal power plants, but they are surprised to find wind, biomass, and geothermal projects under attack by erstwhile allies.”¹¹⁸

The concerns that nearby landowners and environmentalists bring to the table about wind energy facilities should not be disregarded; permitting processes exist, in part, to ensure that such negative impacts are taken into account before projects may go forward. The most prominent concerns regarding wind farms include: aesthetic impacts; noise; health problems associated with shadow flicker and low-frequency sound; interference with radio and communications signals; negative impacts on property values; tourism and recreational opportunities; safety threats posed by ice throw, blade throw, and turbine

115. U.S. Chamber of Commerce, Project No Project: Cape Wind Offshore Wind Farm, <http://pnp.uschamber.com/2009/03/cape-wind-offshore-wind-farm.html> (last visited Jan. 18, 2010); see also Kleekamp, *supra* note 112; Iva Žiža, Note, *Siting of Renewable Energy Facilities and Adversarial Legalism: Lessons from Cape Cod*, 42 NEW ENG. L. REV. 591, 601, 611 (2008).

116. Kahn, *supra* note 107, at 22-23.

117. *Id.* at 23.

118. *Id.* at 29.

collapse; negative environmental impacts caused by turbine construction; and negative impacts on birds, bats, and other wildlife.¹¹⁹

Many of these concerns are supported by early experiences in wind power siting. For example, the Altamont Pass wind farm in California, one of the oldest and largest in the United States, with more than 5000 turbines located on about 150 square kilometers of land,¹²⁰ sparked considerable controversy when it was discovered that large numbers of raptors, owls, and other birds were being killed by the turbines.¹²¹ At that time, avian impacts were “unexpected,”¹²² and they led to an increased concern over the effects of wind development on bird populations.¹²³

Today, the high rate of bird mortality at Altamont Pass is understood to be an “anomaly”¹²⁴ caused by poor siting choices and outdated technology.¹²⁵ Pre-construction avian surveys, the avoidance of high value habitat areas, buffer zones, placing transmission lines underground, and post-construction monitoring are now common

119. See Thomas Content, *Critics Say Wind Turbines Hurt Land Values*, J. SENTINEL (Milwaukee), Sept. 11, 2009, <http://www.jsonline.com/business/59088607.html>; Lisa Kaczke, *Wind Farm Concerns Residents*, DAILY J. (Fergus Falls, Minn.), Oct. 6, 2009, <http://www.fergusfallsjournal.com/news/2009/oct/06/wind-farm-concerns-residents/>; Wind Energy Development Programmatic EIS, Wind Energy Development Environmental Concerns, <http://windeis.anl.gov/guide/concern/index.cfm> (last visited Jan. 18, 2010).

120. JEFFREY ALAN JOHNSON, EFFECTS OF THE BLUE CANYON WIND FARM ON AVIAN POPULATIONS IN SOUTHWEST OKLAHOMA 2 (2008), <http://johnsonanalytical.com/windfarm.pdf>. The Altamont installation is one of the oldest wind farms in the United States, constructed in the 1980s after the Altamont Pass was designated as a Wind Resource Area by the California Energy Commission. *Ctr. for Biological Diversity, Inc. v. FPL Group, Inc.*, 83 Cal. Rptr. 3d 588, 591 (Cal. Ct. App. 2008).

121. In a suit challenging the project, the Center for Biological Diversity claimed that: “it has been known that in the process of generating electricity the Altamont Pass wind turbine generators kill and injure eagles, hawks, falcons, owls, and other raptors, as well as non-raptor birds. . . . Since the 1980’s, the . . . generators . . . have killed tens of thousands of birds, including between 17,000 and 26,000 raptors—more than a thousand Golden Eagles, thousands of hawks, and thousands of other raptors.”

Ctr. for Biological Diversity, 83 Cal. Rptr. 3d at 592 (alteration and quotation in original).

122. SUSAN ORLOFF & ANNE FLANNERY, CAL. ENERGY COMM’N, WIND TURBINE EFFECTS ON AVIAN ACTIVITY, HABITAT USE, AND MORTALITY IN ALTAMONT PASS AND SOLANO COUNTY WIND RESOURCE AREAS 1989-1991, at 1-1, 1-4 (1992), available at http://www.energy.ca.gov/windguidelines/documents/2006-12-06_1992_FINAL_REPORT_1989-1991.PDF.

123. *Id.* at 1-1.

124. Terence Chea, *Activists Seek to Curb Raptor Deaths at California Wind Farm*, SAN DIEGO UNION-TRIB., July 1, 2005, <http://www.signonsandiego.com/news/state/20050701-1112-ca-deadlywindpower.html>.

125. Mick Sagrillo, *Advice From an Expert: Putting Wind Power’s Effect on Birds in Perspective*, <http://www.awea.org/faq/sagrillo/swbirds.html> (last visited Jan. 18, 2010).

techniques used to minimize impacts on bird and bat populations.¹²⁶ Moreover, research has shown that the impacts of wind turbines on birds are no more intense than wildlife mortalities caused by windows, cats, power lines, vehicles, and pesticides.¹²⁷

The noise created by wind turbines may sometimes be disruptive to the natural enjoyment of a rural setting.¹²⁸ Here too, however, the technology has improved over the years and noise levels have been reduced.¹²⁹ In fact, the DOE reports that “concerns about sound are primarily associated with older technology, such as the turbines of the 1980s, which were considerably louder.”¹³⁰ Setback regulations can also ensure that wind turbines are built far enough away from residences so as to minimize noise problems.¹³¹

Local residents sometimes express concern over the “shadow-flicker effect,” caused by the rotating shadows of turbine blades. According to one study, however, “the worst-case conditions would

126. See, e.g., FISH & WILDLIFE SERV., U.S. DEP'T OF THE INTERIOR, DRAFT: VOLUNTARY GUIDELINES FOR WIND ENERGY DEVELOPMENT IN TEXAS, http://www.fws.gov/habitatconservation/windpower/Subcommittee/Existing_Guidelines/Reports/FAC_DRAFT_Framework_July08.pdf (recommending measures to reduce impact of wind projects on wildlife); Joseph Caputo, *Can Wind Power Be Wildlife Friendly*, SMITHSONIAN MAG., Feb. 27, 2009, <http://www.smithsonianmag.com/specialsections/ecocenter/Can-Wind-Power-Be-Wildlife-Friendly.html> (“By curtailing production during low wind conditions, and increasing the wind speed threshold required to jump-start the turbines, bat fatalities dropped between 56 and 92 percent.”); Press Release, Ctr. for Biological Diversity, Lawsuit Seeks Redress for Massive Illegal Bird Kills at Altamont Pass, CA, Wind Farms (Jan. 12, 2003), http://www.biologicaldiversity.org/news/press_releases/birdkills1-12-04.htm (describing measures that could be used to reduce bird deaths); Suzanne Goldenberg, *Texas Wind Farm Pioneers Radar Technology to Protect Migrating Birds*, GUARDIAN (London), May 1, 2009, <http://www.guardian.co.uk/environment/2009/may/01/wind-farm-bird-radar> (describing use of radar technology to avoid bird deaths).

127. See, e.g., GLOBAL ENERGY CONCEPTS, N.Y. STATE ENERGY RESEARCH & DEV. AUTH., WIND ENERGY TOOLKIT 47-48 (2005), available at http://www.powernaturally.com/Programs/Wind/toolkit/4_birdsbatsresvised.pdf [hereinafter WIND ENERGY TOOLKIT]; Emma Marris & Daemon Fairless, *Wind Farms' Deadly Reputation Hard to Shift*, NATURE, May 10, 2007, at 126, 126.

128. DOE REPORT, *supra* note 37, at 117.

129. *Id.*

130. *Id.*

131. See WIND ENERGY TOOLKIT, *supra* note 127, at 63 (“Distance is the most effective mitigating measure in addressing sound from wind turbines. Utilizing setbacks that specify a certain sound level at a certain distance from the turbine are also effective.”). For a sampling of local laws including setback regulations, see, for example, Cohocton, N.Y., Windmill Local Law pt. I(B)(1) (Jan. 6, 2006), available at <http://www.gflrpc.org/programareas/wind/LL/CohoctonWindmillLaw.pdf> (mandating a setback equal to 1.5 times the maximum turbine height); SOUTH BRISTOL, N.Y., LOCAL LAW §§ 170-40(B)(1), 170-41(B)(1) (2003), available at <http://www.gflrpc.org/programareas/wind/LL/TofSouthBristol.pdf> (providing for setbacks of either two times the maximum turbine height or 1.25 times the maximum ice or blade throw distance, whichever is greater in both the residential and commercial setting).

affect, by way of light alteration, neighboring residents a total of 100 minutes per year, and only 20 minutes per year under normal circumstances.”¹³² A study conducted in connection with the siting of the Lempster wind project in New Hampshire concluded that some areas located in very close proximity to the turbines would receive thirty hours or more per year of shadow flicker, while other areas would receive less than twenty hours of shadow impact. Yet even with these results, the siting commission concluded that “the proposed facility will not have an unreasonable adverse impact on either aesthetics or public health and safety as a result of shadow flicker or shadow impacts.”¹³³

Potential host communities are often concerned about the aesthetic impacts of wind farms.¹³⁴ Reactions to the sight of wind turbines vary greatly. “Some people feel that turbines are intrusive; others see them as elegant and interesting.”¹³⁵ Though entirely subjective, aesthetic effects can be minimized somewhat by “painting [turbines] a neutral color, arranging them in a visually pleasing manner, and designing each turbine uniformly.”¹³⁶ An organization in England has even hired an artist to transform wind turbines into works of art.¹³⁷

Relatedly, communities have opposed wind turbines because of the negative impacts that wind turbine aesthetics could have on tourism.¹³⁸ While particularly scenic or historic areas may see some drop in tourism due to wind turbines, some studies have found turbines’ effects on tourism to be negligible.¹³⁹ In addition to aesthetic concerns, residents

132. Windustry, *supra* note 34.

133. SITE EVALUATION, *supra* note 38, at 26-27.

134. Avi Brisman, *The Aesthetics of Wind Energy Systems*, 13 N.Y.U. ENVTL. L.J. 1, 74-80 (2005) (describing aesthetic opposition to wind turbines); *Ecogen, LLC v. Town of Italy*, 438 F. Supp. 2d 149, 153 (W.D.N.Y. 2006) (where residents expressed concern that wind turbines would negatively impact the aesthetics of the town); *Zimmerman v. Bd. of Comm’rs of Wabaunsee County*, 218 P.3d 400 (Kan. 2009) (upholding ban on commercial wind farms due to aesthetic impact and local opposition). *In re Halnon*, 811 A.2d 161, 162 (Vt. 2002) (where residents opposed their neighbors’ application to erect a wind turbine for aesthetic reasons).

135. DOE REPORT, *supra* note 37, at 116.

136. Windustry, *supra* note 34; *see also* Brisman, *supra* note 134, at 77-78.

137. Adrian Pearson, *Artist Working on Turning Wind Turbines into Works of Art*, JOURNAL (Newcastle, Eng.) Dec. 16, 2008, <http://www.journallive.co.uk/north-east-news/todays-news/2008/12/16/artist-working-on-turning-wind-turbine-into-works-of-art-61634-22483669/>.

138. *See, e.g., Wind Turbines Could Hurt Tourism In Ocean County, Study Finds*, STAR LEDGER (Newark), Sept. 9, 2008, http://www.nj.com/news/index.ssf/2008/09/wind_turbines_could_hurt_touri.html.

139. *See* British Wind Energy Ass’n, *Wind Farms and Tourism*, <http://www.bwea.com/ref/tourism.html> (“[W]here studies have been carried out investigating the impact of wind farms on tourism, the results demonstrate that the effect is negligible at worst, with many respondents taking a positive view of wind farms, and saying that it would not affect their likelihood [sic] of returning to an area.”).

worry about the objective impact that wind farms will have on property values.¹⁴⁰ Though it is difficult to determine the precise impact that wind farms have on nearby property values, two studies that have examined this issue found little evidence to support the claim that wind farms cause a decline in neighboring property values.¹⁴¹

On the other hand, turbine construction requires the transportation of large pieces of machinery, often in rural areas where roads are not equipped to handle heavy loads. As a result, construction can cause significant road damage, result in a loss of productive crop land, and cause substantial erosion and/or soil compaction.¹⁴² Furthermore, large pieces of equipment such as wind turbines do raise significant safety issues. Blades can snap and be thrown long distances, as can the ice that forms on the blades during winter months.¹⁴³ Although rare, turbines may collapse, causing damage from falling parts and from the release of lubricants used inside turbine shafts.¹⁴⁴ Of course, the risks associated with wind turbines can be greatly decreased through a variety of safety measures, including regular maintenance, vibration and temperature sensors, pre-installation blade testing, and automatic braking systems.¹⁴⁵

Wind turbines can interfere with microwave, television and radio signals, and radar installations.¹⁴⁶ For this reason, proposed projects are

140. DOE REPORT, *supra* note 37, at 118 (“Residents can become particularly concerned about possible declines in local property values when wind energy projects are proposed in their community.”); Content, *supra* note 119.

141. DOE REPORT, *supra* note 37, at 118 (citing GEORGE STERZINGER ET AL., RENEWABLE ENERGY POLICY PROJECT, THE EFFECT OF WIND DEVELOPMENT ON LOCAL PROPERTY VALUES (2003), available at http://www.repp.org/articles/static/1/binaries/wind_online_final.pdf; Ben Hoen, Impacts of Windmill Visibility on Property Values in Madison County, New York 34 (Apr. 30, 2006) (unpublished M.S. thesis, Bard College), available at <http://www.dekalbcounty.org/Planning/Exhibit%20F%20%28part%203%29.pdf>).

142. See WIND ENERGY TOOLKIT, *supra* note 127, at 15-18.

143. See Michael Connellan, *Spinning to Destruction*, GUARDIAN (London), Sept. 4, 2008, at 1, available at <http://www.guardian.co.uk/technology/2008/sep/04/energy.engineering> (describing danger of turbine collapse and blade throw); Simone Kaiser & Michael Fröhlingsdorf, *Wuthering Heights: The Dangers of Wind Power*, SPIEGEL ONLINE, Aug. 20, 2007, <http://www.spiegel.de/international/germany/0,1518,500902,00.html> (same). But see Am. Wind Energy Ass’n, *supra* note 39 (“Ice throw, while it can occur, is of little danger because setbacks typically required to minimize noise . . . are sufficient to protect against danger to the public, and because ice buildup slows a turbine’s rotation and will be sensed by a turbine’s control system, causing the turbine to shut down.”).

144. See, e.g., Connellan, *supra* note 143 (describing turbine collapse); Indus. Wind Action Group, Pictures: Searsburg VT Catastrophic Turbine Failure-1, <http://www.windaction.org/pictures/18387> (last visited Jan. 18, 2010) (displaying a photo of a collapsed wind turbine).

145. See Danish Wind Indus. Ass’n, Wind Turbine Safety, <http://www.talentfactory.dk/en/tour/wtrb/safety.htm> (last visited Jan. 18, 2010) (describing various turbine safety devices).

146. MICHAEL BRENNER ET AL., WIND FARMS AND RADAR 5 (2008), available at <http://www.fas.org/irp/agency/dod/jason/wind.pdf>; BERNHARD VOLL, BLACK SPRINGS WIND FARM:

subject to review by the National Telecommunications and Information Administration ("NTIA"), the Department of Defense ("DOD"), and the Federal Aviation Administration ("FAA") to ensure that there is no harmful interference.¹⁴⁷

Some studies also suggest that local opposition to wind development may have less to do with the actual impacts of wind turbines than with other social and political factors. For example, people who do not support renewable energy are unlikely to support wind development in their communities.¹⁴⁸ For others, opposition to wind power development may stem from a lack of knowledge about the actual implications of turbine construction—a sort of fear of the unknown. Studies have documented this bias by showing that opposition to turbines decreases after they are built.¹⁴⁹

In the end, although many local objections to the installation of wind turbines are valid, they must be weighed against the national interest in developing wind energy.¹⁵⁰ As an advocate for renewable energy explained more than a decade ago, "when one steps back and takes a good look at the big picture, the levels of bird kills coming from wind turbines [are] completely dwarfed by the looming catastrophe of global warming, and the air pollution impacts associated with the status quo."¹⁵¹ Given the national importance of renewable energy policies, it seems incongruous to leave siting responsibility primarily in the hands of localities.

IV. FEDERAL WIND POLICIES

Federal policies effecting the development of wind energy have taken two primary forms. First, a host of federal agencies may be

ELECTRO-MAGNETIC INTERFERENCE (EMI) STUDY 5 (2006), available at <http://majorprojects.planning.nsw.gov.au/files/1887/Appendix%20G%20Electromagnetic%20interference%20study.pdf>.

147. See *infra* notes 168-77 and accompanying text.

148. STEFFEN DAMBORG, DANISH WIND INDUS. ASS'N, PUBLIC ATTITUDES TOWARDS WIND POWER 4 (2003), available at <http://www.windwin.de/images/pdf/wc03041.pdf>.

149. *Id.* (discussing these studies and remarking that "public acceptance seems to increase in the local area after the installation of the wind turbines").

150. Thomas W. Merrill, *Preemption in Environmental Law: Formalism, Federalism Theory and Default Rules*, in *FEDERAL PREEMPTION: STATES' POWERS, NATIONAL INTERESTS* 175 (Richard A. Epstein & Michael S. Greve eds., 2007) (recommending federal regulation that permits weighing the costs and benefits of nationally beneficial activities that are likely to be opposed at the local level).

151. Kahn, *supra* note 107, at 31 (quoting Peter Asmus, *Hot Air, Hot Tempers, and Cold Cash: Clashes of Ethics and Clashes of Interests in the Controversy Over Wind Power*, AMICUS J., Fall 1994, at 30, 34 (quoting V. John White, Executive Director of the Center for Energy and Efficiency and Renewable Technology)).

involved in the wind farm permitting process. These include the DOE,¹⁵² the MMS,¹⁵³ the United States Army Corps of Engineers,¹⁵⁴ the Fish and Wildlife Service (“FWS”),¹⁵⁵ the Bureau of Land Management (“BLM”),¹⁵⁶ the Environmental Protection Agency,¹⁵⁷ the DOD,¹⁵⁸ the FAA,¹⁵⁹ and the NTIA.¹⁶⁰ Second, a number of federal programs provide financial incentives or tax credits to encourage the production of renewable energy.¹⁶¹

A. Federal Wind Siting Guidelines and Regulations

Several federal administrative agencies have issued or are developing comprehensive guidelines for siting wind energy facilities on federal land. For example, the BLM, which manages 20.6 million acres

152. See, e.g., U.S. Dep’t of Energy, Wind & Hydropower Technologies Program, About the Program, <http://www1.eere.energy.gov/windandhydro/about.html> (last visited Jan. 18, 2010).

153. See, e.g., Press Release, Minerals Mgmt. Serv., President Obama, Secretary Salazar Announce Framework for Renewable Energy Development on the U.S. Outer Continental Shelf (Apr. 22, 2009), <http://offshorewind.net/OffshoreProjects/MMS/index.html>.

154. See, e.g., AARON M. FLYNN, CONG. RESEARCH SERV., WIND ENERGY: OFFSHORE PERMITTING 4 (2005), available at https://www.policyarchive.org/bitstream/handle/10207/161/RL32658_20050330.pdf?sequence=1 (“[T]he Army Corp of Engineers has taken the lead role in the federal permitting process, claiming jurisdiction under the Rivers and Harbors Act (RHA), as amended by the Outer Continental Shelf Lands Act (OCSLA).”).

155. See, e.g., U.S. FISH & WILDLIFE SERV., DRAFT: WIND TURBINE GUIDELINES ADVISORY COMMITTEE RECOMMENDATIONS 4 (2009), http://www.fws.gov/habitatconservation/windpower/Second_Release_Draft_One_Text_FAC_Briefing_3_13_09.pdf (providing guidance on avoiding/minimizing impacts on wildlife and habitats).

156. See, e.g., Memorandum from Henri R. Bisson, Dir., Bureau of Land Mgmt., U.S. Dep’t of the Interior, to All Field Officials (Dec. 19, 2008), available at http://windeis.anl.gov/documents/docs/IM_2009-043_BLMWindEnergyDevelopmentPolicy.pdf (providing guidance for applications to construct wind energy projects on public lands).

157. Projects on federal land and those that have an impact on areas of federal oversight are subject to the National Environmental Policy Act (“NEPA”). See 42 U.S.C. § 4332 (2006); see also DOE REPORT, *supra* note 37, at 119-20.

158. See, e.g., Letter from Gerald F. Pease, Jr., Executive Dir., Dep’t of Def. Policy Bd. on Fed. Aviation (Jan. 29, 2007), available at http://www1.eere.energy.gov/windandhydro/federalwindsiting/pdfs/windmill_policy_letter_012907.pdf (describing DOD review of wind energy projects).

159. See, e.g., FED. AVIATION ADMIN., U.S. DEP’T. OF TRANSP., OBSTRUCTION MARKING AND LIGHTING 33-34 (2007), available at https://oeaaa.faa.gov/oeaaa/external/content/AC70_7460_1K.pdf (providing guidelines for wind turbine marking and lighting).

160. See Letter from Karl B. Nebbia, Chairman, Nat’l Telecomm. & Info. Admin., to Chairman, FAS (Nov. 13, 2006), available at http://www1.eere.energy.gov/windandhydro/federalwindsiting/pdfs/ntia_to_irac.pdf (describing NTIA review of proposed wind mill sites). NTIA is responsible for managing the federal spectrum and is involved in resolving technical telecommunications issues for the federal government and private sector. Nat’l Telecomm. & Info. Admin., About NTIA, <http://www.ntia.doc.gov/about.html> (last visited Jan. 18, 2010).

161. See *infra* Part IV.B.

of public lands with wind energy potential, recently issued a comprehensive wind energy policy to provide guidance on best management practices and measures to mitigate potential impacts on birds, wildlife habitat and other resource values.¹⁶² The U.S. Forest Service is similarly considering adopting directives to provide further guidance for wind energy development on National Forest System lands.¹⁶³ According to the Forest Service,

[the directives] would provide a consistent framework and terminology for making decisions regarding proposals and applications for wind energy uses. Specifically, the directives would provide guidance on siting wind energy turbines, evaluating a variety of resource interests, and addressing issues specifically associated with wind energy in the special use permitting process. These issues include potential effects on scenery, national security, significant cultural resources, and wildlife, especially migratory birds and bats.¹⁶⁴

In addition, the FWS established a Wind Turbine Siting Working Group to develop a set of comprehensive national guidelines for siting and constructing wind energy facilities.¹⁶⁵ The guidelines “are intended to be used by all prospective developers of wind energy projects . . . [and] also are intended to provide a useful, suggested approach for local and state officials.”¹⁶⁶

Wind energy developers must also coordinate with several federal agencies to ensure that proposed wind sites do not interfere with other national concerns. For example, the FAA requires any person or organization who intends to sponsor any construction that may affect navigable airspace to undergo an Obstruction Evaluation/Airport Airspace Analysis.¹⁶⁷ The Department of Defense and Department of

162. Memorandum, Henri R. Bisson, *supra* note 162. In addition, the BLM’s Lands and Realty Management program has authorized “a total of 192 rights-of-ways for the use of public lands for wind energy production sites.” Bureau of Land Management, Renewable Energy and the BLM: Wind (Jan. 2009), http://www.blm.gov/pgdata/etc/medialib/blm/wo/MINERALS_REALTY__AND_RESOURCE_PROTECTION_/energy.Par.58306.File.dat/09factsheetmap_Wind.pdf.

163. Wind Energy, Proposed Forest Service Directives, 72 Fed. Reg. 54233, 54233 (Sept. 24, 2007). The public comment period is closed. See U.S. Forest Service, FS and BLM Energy Documents, <http://www.fs.fed.us/recreation/permits/energy.htm> (last visited Jan. 18, 2010).

164. Wind Energy, Proposed Forest Service Directives, 72 Fed. Reg. at 54233. On March 13, 2009, the committee issued a second draft of its proposed guidelines. U.S. FISH & WILDLIFE SERV., *supra* note 161, at 1.

165. See U.S. FISH & WILDLIFE SERV., *supra* note 155.

166. *Id.* at 7.

167. FAA, 14 C.F.R. § 77.13 (2009); FED. AVIATION ADMIN., U.S. DEP’T OF TRANSP., ORDER JO 7400.2G: PROCEDURES FOR HANDLING AIRSPACE MATTERS § 5-2-1 (2008), *available at*

Homeland Security Policy on Proposed Wind Farm Locations requires the DOD to work with the FAA and other federal agencies as needed to evaluate wind-farm proposals on a case-by-case basis to mitigate the potential effect of wind farms on air defense radars.¹⁶⁸

The NTIA also reviews wind siting applications to ensure proposed wind turbines do not interfere with radio, microwave, radar, and other frequencies.¹⁶⁹ In addition, the U.S. Army Corps of Engineers issues permits for wind projects that affect wetlands,¹⁷⁰ and the MMS oversees permitting for all off-shore wind projects located on the outer continental shelf.¹⁷¹

B. Fiscal Incentives for Wind Development

In addition to wind siting guidance and regulation, the federal government directly finances renewable energy projects, including wind projects, through a variety of tax incentives and grant programs. The total amount of federal subsidies for renewable energy has almost doubled in the past decade, increasing from 17% of total energy

http://www.faa.gov/air_traffic/publications/atpubs/AIR/index.htm. Part 2 contains the process and procedures the FAA uses to conduct an aeronautical study and/or a discretionary review. *See id.* § 5-1-1.

168. *See* Memorandum from Gerald F. Pease, Jr., *supra* note 164. In 2006, the DOD issued a report on the effect of wind farms on military readiness to Congress. The report concluded that air defense radars could be adversely affected by wind power projects, but that mitigation practices did exist to preclude such effects. OFFICE OF THE DIR. OF DEF. RESEARCH & ENG'G, DEP'T OF DEF., THE EFFECT OF WINDMILL FARMS ON MILITARY READINESS 4 (2006), *available at* http://www1.eere.energy.gov/windandhydro/federalwindsiting/pdfs/dod_windfarms.pdf. It left the primary responsibility to the FAA and to the National Weather Service to determine effects on Air Traffic Control radar and weather forecasting radars. *Id.*; *see also* DOE REPORT, *supra* note 37, at 117 (noting that the FAA issues an advisory circular dealing with obstruction lighting and marking, including uniform recommendations for lighting wind energy projects).

169. *See* Letter from Karl B. Nebbia, *supra*, note 160.

170. *See* FLYNN, *supra* note 154, at 7; *Rapanos v. United States*, 547 U.S. 715, 721 n.1, 723, 742 (2006) (discussing the U.S. Army Corps' responsibilities under the Clean Water Act); *see also* 33 U.S.C. § 403 (2006); *Alliance to Protect Nantucket Sound, Inc. v. U.S. Dep't of Army*, 398 F.3d 105, 110-11 (1st Cir. 2005) (holding that the Army Corps' section 10 permitting authority is not limited to devices intended to facilitate the exploration of mineral resources, but that it extends to all structures located on the seabed).

171. Renewable Energy and Alternate Uses of Existing Facilities on the Outer Continental Shelf, 74 Fed. Reg. 19,638, 19,653 (Apr. 29, 2009) (to be codified at 30 C.F.R. pt. 285). On April 22, 2009, the MMS established a program to "grant leases, easements, and rights-of-way for orderly, safe, and environmentally responsible renewable energy development activities, such as the siting and construction of off-shore wind farms, on the [Outer Continental Shelf]." *See* Press Release, *supra* note 153.

subsidies in 1999 to 29% in 2007.¹⁷² The increased subsidization of renewables, relative to other forms of energy, reflects a national commitment to reducing the country's dependence on fossil fuels and natural gas.

The most important federal subsidy for wind power is the renewable energy production tax credit ("PTC"), which provides a tax credit for electricity generated by wind plants for a period of ten years from initial plant operation.¹⁷³ Evidence suggests that wind energy production is tied directly to the availability of this tax credit.¹⁷⁴ The PTC was extended in October 2008 to run through the end of 2009, and extended again as part of the American Recovery and Reinvestment Act of 2009 to run through 2013.¹⁷⁵

Other relevant tax credits include the federal Modified Accelerated Cost-Recovery System, which permits businesses to recover investments in certain property, including small wind facilities, through depreciation deductions,¹⁷⁶ and the Residential Renewable Energy Tax Credit, which

172. ENERGY INFO. ADMIN., U.S. DEP'T OF ENERGY, FEDERAL FINANCIAL INTERVENTIONS AND SUBSIDIES IN ENERGY MARKETS 2007, at xii (2008), *available at* <http://www.eia.doe.gov/oiaf/servicerpt/subsidy2/pdf/subsidy08.pdf>.

173. *See* I.R.C. § 45(a)(2)(A)(ii) (2006 & West Supp. 2009); Database of State Incentives for Renewables & Efficiency, Renewable Electricity Production Tax Credit (PTC), http://www.dsireusa.org/library/includes/incentive2.cfm?Incentive_Code=US13F (last visited Jan. 18, 2010) ("The federal renewable electricity production tax credit (PTC) is a per-kilowatt-hour tax credit for electricity generated by qualified energy resources and sold by the taxpayer to an unrelated person during the taxable year.").

174. In its report to Congress, the Energy Information Administration predicted that "generation resulting from the growth in wind power capacity that is supported by renewable production tax credits would likely be replaced with generation from a broad mix of generation sources if that credit were unavailable." ENERGY INFO. ADMIN., *supra* note 172, at xvii. In the past, "when the credit was not extended well before its expiration date, installation growth rates fell by 93% (2000), 73% (2002) and 77% (2004)." GLOBAL WIND ENERGY COUNCIL & GREENPEACE INT'L, *supra* note 37 at 18.

175. I.R.C. § 48(d) (West. Supp. 2009); American Recovery and Reinvestment Act of 2009, H.R. 1, 111th Cong. § 1102 (2009) (enacted). Under the February 2009 legislation, facilities that qualify for the PTC can "opt instead to take the federal business energy investment credit (ITC) or an equivalent cash grant from the U.S. Department of Treasury." Database of State Incentives for Renewables & Efficiency, *supra* note 173. The federal ITC is equal to 30% of expenditures, with no maximum credit for small wind turbines, up to 100 kW in capacity, placed in service after December 31, 2008. I.R.C. § 48(a)(2), (c)(4)(B) (West. Supp. 2009).

176. I.R.C. § 168(e)(3)(B)(vi)(I) (2006); *see also* Database of State Incentives for Renewables & Efficiency, Modified Accelerated Cost-Recovery (MACRS) + Bonus Depreciation (2008-2009), http://www.dsireusa.org/library/includes/incentive2.cfm?Incentive_Code=US06F&state=US&CurrentPageID=1&RE=1&EE=0 (last visited Jan. 18, 2010).

provides individual taxpayers with a tax credit equal to 30% of the cost of installing renewable energy systems in a dwelling.¹⁷⁷

Federal funding for renewable energy projects, including wind projects, is also available through a variety of grant programs, including the Tribal Energy Program¹⁷⁸ and the Rural Energy for America Program.¹⁷⁹ In addition, the American Recovery and Reinvestment Act of 2009 appropriated \$3.2 billion for the Energy Efficiency and Conservation Block Grant Program.¹⁸⁰ Although not specifically aimed at renewable energy development, the block grant program provides federal grants to reduce energy use and fossil fuel emissions, and for improvements in energy efficiency, demonstrating the current political commitment to energy reform.¹⁸¹

177. I.R.C. § 25D(a) (2006). The credit was initially authorized by section 206(d) of the Energy Policy Act of 2005 and extended to small wind energy systems by the Energy Improvement and Extension Act of 2008. Energy Policy Act of 2005, Pub. L. 109-58, § 206(d), 119 Stat. 593, 656 (2005); Energy Improvement and Extension Act of 2008, H.R. 1424 110th Cong. § 104 (2008); *see also* I.R.S., Residential Energy Efficient Property Credit (Form 5695), at 4 (2008), *available at* <http://www.irs.gov/pub/irs-pdf/f5695.pdf>. *But see* ENERGY INFO. ADMIN., U.S. DEP'T OF ENERGY, IMPACT OF ENERGY POLICY ACT OF 2005 SECTION 206 REBATES ON CONSUMERS AND RENEWABLE ENERGY CONSUMPTION, WITH PROJECTIONS TO 2010, at 6 (2006), *available at* <http://www.eia.doe.gov/cneaf/solar/renewables/page/epact/epact.pdf> (“[T]he installed cost of residential wind turbines is so high that th[is] . . . rebate would likely not cause many additional units to be purchased.”).

178. The Tribal Energy Program, administered by the DOE, provides financial and technical assistance, education, and training to tribes for the development of renewable energy resources. *See* U.S. Dep't of Energy, Energy, Efficiency & Renewable Energy: Tribal Energy Program, <http://apps1.eere.energy.gov/tribalenergy/> (last visited Jan. 20, 2010).

179. The Rural Energy for America Program, codified at 7 U.S.C. § 8107, is administered by the U.S. Department of Agriculture. Food, Conservation, and Energy Act of 2008, Pub. L. No. 110-234, § 9007, 122 Stat. 923, 1315 [hereinafter 2008 Farm Bill] (codified at 7 U.S.C. § 8107 (2008)). It “promotes energy efficiency and renewable energy for agricultural producers and rural small businesses through the use of (1) grants and loan guarantees for energy efficiency improvements and renewable energy systems, and (2) grants for energy audits and renewable energy development assistance.” Database of State Incentives for Renewables & Efficiency, USDA – Rural Energy for America Program (REAP) Loan Guarantees, http://www.dsireusa.org/library/includes/incentive2.cfm?Incentive_Code=US46F&State=federal¤tpageid=1&ee=1&re=1 (last visited Jan. 18, 2010).

180. DOE to Award \$3.2 Billion in Energy Efficiency Block Grants, EERE NETWORK NEWS (U.S. Dep't of Energy, Washington D.C.) Mar. 26, 2009, http://apps1.eere.energy.gov/news/news_detail.cfm/news_id=12366; *see also* U.S. Dep't of Energy, Energy Efficiency and Conservation Block Grant Program, <http://www.eecbg.energy.gov/> [hereinafter U.S. Dep't of Energy, Energy Efficiency] (last visited Jan. 18, 2010).

181. U.S. Dep't of Energy, Energy Efficiency, *supra* note 186.

V. OVERCOMING LOCAL OPPOSITION: LESSONS FROM THE TELECOMMUNICATIONS ACT OF 1996

Since taking office in 2009, President Obama has made energy independence a national priority.¹⁸² To that end, Congress has allocated hundreds of millions of dollars for renewable energy projects, including wind energy development, and is considering adopting a federal RPS.¹⁸³ Moreover, recent polls have found that Americans overwhelmingly support the enactment of a federal RPS.¹⁸⁴

Despite national support for wind energy development, the wind siting process remains largely uncoordinated and subject to state and/or local control. As a result, wind siting regulations vary, not only between states, but also within states, creating an inconsistent and often unpredictable regulatory process.

Given the national interest in renewable energy, this Part argues for the enactment of a federal wind siting policy to constrain local discretion with regard to wind siting.¹⁸⁵ Congress appears to have used a similar strategy in the telecommunications context. Specifically, the TCA includes a cell phone tower siting policy as part of its overall strategy to aid in the deployment of a national telecommunication network.¹⁸⁶ The Telecommunication Siting Policy leaves substantive siting decisions primarily in the hands of local decision makers, but constrains local discretion in certain specific areas.¹⁸⁷ In so doing, the Telecommunication Siting Policy balances legitimate local concerns against the broader national interest in developing a communications network.¹⁸⁸ As the First Circuit observed, “the TCA works like a scale that, *inter alia*, attempts to balance two objects of competing weight: on one arm sits the need to accelerate the deployment of

182. Obama for America, *supra* note 1.

183. See *supra* Part IV.B.

184. See *supra* note 11 and accompanying text.

185. As Professor Thomas Merrill has argued: “NIMBY presents a classic prisoners dilemma. Everyone has an incentive to export the costs of an activity (such as a locally undesirable land use), but if everyone pursues this strategy, the benefits of the activity are lost to all. *Federal regulation that permits weighing the costs and benefits of the activity in question as part of an overall strategy seems to be a logical response.*” Merrill, *supra* note 150, at 175 (emphasis added).

186. See Steven J. Eagle, Wireless Telecommunications, Infrastructure Security, and the NIMBY Problem, 54 CATH. U. L. REV. 445, 445-46 (2005).

187. See 47 U.S.C. § 332 (2006).

188. See *U.S. Cellular Corp. v. City of Wichita Falls*, 364 F.3d 250, 253 (5th Cir. 2004) (describing the Telecommunication Siting Policy’s balance of national and local interests); Eagle, *supra* note 186, at 445 (“The Siting Policy is an important attempt to harmonize local autonomy in land use regulation and national commerce.”).

telecommunications technology, while on the other arm rests the desire to preserve state and local control over zoning matters.”¹⁸⁹

This Part, thus, proposes a cooperative federalist framework for siting wind turbines modeled on the Telecommunication Siting Policy. Section A explores the advantages of a cooperative federalist framework for wind siting. In particular, this Section argues that cooperative federalism strikes a balance between federal preemption, on the one hand, and decentralization, on the other, increasing regulatory uniformity without sacrificing the benefits of local tailoring and experimentation.¹⁹⁰ Section B describes the Telecommunication Siting Policy’s innovative cooperative federalist approach to balancing national telecommunication goals against local siting concerns. Section C proposes a federal wind siting policy that, like the Telecommunication Siting Policy, leaves siting decisions in the hands of local officials but places specific federal constraints on the local zoning process.

A. Federal Intervention: A Cooperative Approach

Doctrinally it seems clear that so long as Congress is regulating within the scope of its enumerated powers, it can freely preempt state and local laws.¹⁹¹ Notwithstanding Congress’s formal authority to broadly preempt state and local government regulations, Congress is often hesitant to do so. As the Supreme Court’s federalism opinions make clear, there are a number of compelling reasons for Congress to wield its preemptive power cautiously.¹⁹² In particular, the Court has noted that federalism

assures a decentralized government that will be more sensitive to the diverse needs of a heterogeneous society; it increases opportunity for citizen involvement in democratic processes; it allows for more innovation and experimentation in government;

189. See *ATC Realty, LLC v. Town of Kingston*, 303 F.3d 91, 94 (1st Cir. 2002).

190. See Weiser, *supra* note 27, at 1696.

191. See *Pac. Gas & Elec. Co. v. State Energy Res. Conservation & Dev. Comm’n*, 461 U.S. 190, 203 (1983) (“It is well established that within constitutional limits Congress may pre-empt state authority by so stating in express terms.”); see also Caleb Nelson, *Preemption*, 86 VA. L. REV. 225, 234 & n.32 (2000); Christopher H. Schroeder, *Supreme Court Preemption Doctrine*, in *PREEMPTION CHOICE: THE THEORY, LAW, AND REALITY OF FEDERALISM’S CORE QUESTION* 119, 120 (William W. Buzbee ed., 2009) (“So long as Congress is acting within its enumerated powers, such as the Commerce Clause, Congress also has the authority under the Supremacy Clause to push aside state law.”).

192. See, e.g., *United States v. Morrison*, 529 U.S. 598, 616 n.7 (2000) (citing *Gregory v. Ashcroft*, 501 U.S. 452, 458-59 (1991) (discussing the benefits of dividing federal and state authority)).

and it makes government more responsive by putting the States in competition for a mobile citizenry.¹⁹³

Thus, rather than adopt preemptive national policies, federal regulatory programs have long embraced “cooperative” regimes that utilize a mix of federal, state, and local agencies to implement federal law.¹⁹⁴ As Philip Weiser explains:

Cooperative federalism programs set forth some uniform federal standards—as embodied in the statute, federal agency regulations, or both—but leave state agencies with discretion to implement the federal law, supplement it with more stringent standards, and, in some cases, receive an exemption from federal requirements. This power allows states to experiment with different approaches and tailor federal law to local conditions.¹⁹⁵

By using a combination of federal, state, and local actors, cooperative federalism captures “the benefits of diversity in regulatory policy within a federal framework.”¹⁹⁶

1. Increased Uniformity

A national wind siting policy would increase regulatory uniformity in the siting process.¹⁹⁷ According to the DOE, “[i]ncreased uniformity of regulatory requirements across regions would greatly facilitate the increased deployment of wind projects necessary to reach [federal renewable energy goals].”¹⁹⁸ A unitary federal policy would benefit wind energy developers by reducing barriers to interstate trade and providing a consistent and predictable regulatory environment.¹⁹⁹

193. *Gregory*, 501 U.S. at 458 (citing Michael W. McConnell, *Federalism: Evaluating the Founders' Design*, 54 U. CHI. L. REV. 1484, 1491-1511 (1987)).

194. *See Weiser*, *supra* note 27, at 1695.

195. *Id.* at 1696. Recently, scholars have identified a trend in which state agencies are preempted from imposing standards that are more stringent than federal standards. *See* William W. Buzbee, *Interaction's Promise: Preemption Policy Shifts, Risk Regulation, and Experimentalism Lessons*, 57 EMORY L.J. 145, 147 (2007) (characterizing as “ceiling preemption,” federal preemptive schemes that preclude “any more stringent or different regulation”); Engel, *supra* note 29, at 184-85 (describing recent trend in ceiling preemption). *See generally* Buzbee, *supra* note 29 (analyzing ceiling preemption). For further discussion of ceiling preemption in the context of the TCA, *see infra* notes 238-42.

196. *See Weiser*, *supra* note 27, at 1695.

197. *See Sovacool*, *supra* note 18, at 451.

198. DOE REPORT, *supra* note 37, at 119.

199. *See Sovacool*, *supra* note 18, at 421 (“[S]ingle federal standards make for a more efficient regulatory environment than a multiplicity of state standards. Differing state standards tend to heighten barriers to interstate trade, and uniformity helps manufacturers and industry by providing a consistent and predictable statutory environment.”); Roderick M. Hills, Jr., *Against Preemption*:

Although benefiting industry is sometimes a reason to suspect, rather than endorse, federal preemption,²⁰⁰ in the case of wind energy, the national goal of developing a renewable, domestic energy source seems aligned with industry interests.

In contrast, local control of wind siting increases application and compliance costs for developers and enables individual communities to stymie wind energy development. According to a pro-wind energy group in Wisconsin, “[o]pponents of wind energy developments have tied the hands of wind developers by successfully changing local laws to ensure wind turbines cannot be built in their area. This system of overly restrictive local ordinances has brought the construction of wind farms in Wisconsin to a screeching halt.”²⁰¹

Indeed, as a recent editorial criticizing the inconsistent regulatory landscape in Wyoming cautions:

There’s no question that wind power will continue to become a bigger piece of the nation’s energy mix, and wind turbines are going to spring up across the country. If Wyoming doesn’t figure out soon how it wants to handle the siting of wind farms in the state—including a permitting process that provides some

How Federalism Can Improve the National Legislative Process, 82 N.Y.U. L. REV. 1, 29-30 (2007) (noting that industry interest groups will often favor regulatory uniformity even when that uniformity results in more stringent controls); Thomas W. Merrill, *Preemption and Institutional Choice*, 102 NW. U. L. REV. 727, 732 (2008) (noting that business corporations and free market advocates tend to be pro-preemption because it “radically simplifies the regulatory structure in any given area, replacing a mélange of federal, state, and local requirements with a single set of federal rules”).

200. Indeed, federal preemption statutes are often enacted after intense lobbying by the regulated industry seeking to displace an array of diverse regulatory standards with a uniform federal standard. See Engel, *supra* note 29, at 184 (“Federal preemption can be considered an unpleasant by-product of interest group lawmaking”); Michael S. Greve & Jonathan Klick, *Preemption in the Rehnquist Court: A Preliminary Empirical Assessment*, 14 SUP. CT. ECON. REV. 43, 53 (2006) (finding that preemption cases are “overwhelming[ly]” initiated by business or private parties); Thomas W. Hazlett, *Explaining the Telecommunications Act of 1996: Comment on Thomas G. Krattenmaker*, 29 CONN. L. REV. 217, 223 (1996) (arguing that the reforms under the Telecom Act were motivated, in large part, by self-interested industry lobbyists).

201. Ryan Schryver, *The Future of Wind Farms in Wisconsin: Left Blowing in the Breeze*, DEFENDER (Clean Wis., Madison, Wis.), Spring 2008, at 7, 7, <http://www.cleanwisconsin.org/publications/defender/Defender-Spring-08.pdf>; see also *Bill Would Help Small Wind Farm Projects*, REP., Mar. 4, 2008, <http://www.windaction.org/news/14481>. The Wisconsin Governor’s Task Force on Global Warming similarly concluded that many wind projects are prevented from going forward by local restrictions. See GOVERNOR’S TASK FORCE ON GLOBAL WARMING, FINAL REPORT TO GOVERNOR JIM DOYLE: WISCONSIN’S STRATEGY FOR REDUCING GLOBAL WARMING 107 (2008), available at http://dnr.wi.gov/environmentprotect/gtfgw/documents/Final_Report.pdf.

consistency for developers—there's a good chance those turbines will be built elsewhere.²⁰²

Thus, to wind energy developers and supporters, centralized review of wind energy permitting applications is preferable to local jurisdiction. As one commentator explained, “[s]tate permitting is advantageous to power plant developers because state proceedings are removed from local electoral politics. State permit reviews are never simple and are always costly. . . . Still, a state proceeding offers a degree of time certainty and an atmosphere of fairness often absent at the local level.”²⁰³

While a number of states have been active in facilitating the development of wind energy by centralizing the siting and permitting process, many other states are unable or unwilling to do so. For example, a Kansas bill that would preempt local regulations “restricting or prohibiting the use of any wind turbine”²⁰⁴ has been strenuously opposed by the Kansas Association of Counties.²⁰⁵ Similarly, in New York, a state with a strong tradition of home rule, the Association of Towns passed a resolution to “preserve local authority over the siting of [wind farms].”²⁰⁶ Practically speaking, therefore, state action cannot completely substitute for national legislation in this area.²⁰⁷

2. Local Tailoring and Regulatory Experimentation

A cooperative federalist approach to wind siting could increase regulatory uniformity without sacrificing local tailoring and regulatory experimentation. Local tailoring is desirable in the land use context because decisions regarding the use of land have a greater impact on those living nearby than on those far away, and because communal decisions regarding land use are essential to creating and expressing

202. *Wyo Wind Farms Need Consistent Regulations*, *supra* note 71.

203. Kahn, *supra* note 107, at 24.

204. H.R. 2043, 2009 Leg., Reg. Sess., at 6 (Kan. 2009), available at <http://www.kslegislature.org/bills/2010/2043.pdf>.

205. The Association argues that the legislation “essentially strips counties (and cities) of the most basic right to regulate land use within their jurisdictions.” *Establishing the Net Metering and Easy Connection Act for Wind Generation: Hearing on H.R. 2043 Before the H. Energy and Util. Comm.*, 2009 Leg., Reg. Sess. (Kan. 2009), available at <http://www.kslegislature.org/committeeminutes/09-10/house/hengery/20090129hEnergy.pdf>.

206. NEW YORK STATE ASS’N OF TOWNS, *supra* note 89, at 5.

207. Sovacool, *supra* note 18, at 405 (noting with regard to environmental regulation that “[w]hile state-based action is certainly preferable to no action at all, it is doubtful that such actions should completely substitute for national legislation”).

community character and preferences.²⁰⁸ Moreover, decades of experience in environmental regulation demonstrate that federal environmental policies should be tailored to local conditions.²⁰⁹

In addition, local tailoring is particularly relevant for wind siting. Although wind energy is available throughout the United States, characteristics of wind rich areas vary greatly. Wind energy is available on-shore and off-shore, in both rural and urban areas.²¹⁰ Given this diversity, best practices for facilities siting vary greatly with regard to many of the most commonly contested issues, including noise abatement, setback requirements, environmental impacts, shadow flicker, aesthetics, and safety regulation. As a result, uniform substantive federal siting guidelines are unlikely to account for variations in local geography and culture.

Moreover, because the technology is relatively new, unitary federal guidelines might lock in sub-optimal regulatory choices. As William Buzbee explains, “challenges like climate change and greenhouse gas emissions, or diverse risks of chemical facilities, seem poorly suited to federal assertion of a preemptive unitary federal choice that acts as a ceiling, prohibiting more protective state law or incentives and reexamination promoted by potential common law liability.”²¹¹

In contrast, a cooperative federalist regime capitalizes on the ability of sub-national governments to serve as “laboratories” by leaving room for state and local governments to experiment with regulatory design.²¹² While “[a] national standard may ultimately emerge, . . . avoiding the premature selection of such a standard—or its ineffective administration—leads to better regulatory policy.”²¹³

208. See Marci A. Hamilton, *Federalism and the Public Good: The True Story Behind the Religious Land Use and Institutionalized Persons Act*, 78 IND. L.J. 311, 335 (2003).

209. Weiser, *supra* note 27, at 1699 (“[M]odern environmental regulation convincingly demonstrates how ‘[t]he need to tailor environmental policy to local conditions and the even more important need to use state technical and personnel resources compel Congress to share some of its authority.’” (quoting John P. Dwyer, *The Role of State Law in an Era of Federal Preemption: Lessons From Environmental Regulation*, LAW & CONTEMP. PROBS., Summer 1997, at 203, 203)).

210. MICK SAGRILLO, SMALL ROOFTOP WIND TURBINES: COMMON QUESTIONS AND ANSWERS 1 (2009), http://www.awea.org/smallwind/pdf/smallrooftopwindturbine_factsheet.pdf; Rosenberg, *Making Renewable Energy*, *supra* note 2, at 638-39, 641, 674.

211. Buzbee, *supra* note 195, at 158.

212. *New State Ice Co. v. Liebmann*, 285 U.S. 262, 311 (1932) (Brandeis, J., dissenting) (“It is one of the happy incidents of the federal system that a single courageous State may, if its citizens choose, serve as a laboratory; and try novel social and economic experiments without risk to the rest of the country.”).

213. Weiser, *supra* note 27, at 1702. The history of RPS programs illustrates the way in which states experiment with environmental policy:

B. Telecommunication Siting

The TCA represents a modern cooperative federalist regulatory regime that furthers national communication priorities, while leaving room for state and local tailoring and experimentation.²¹⁴ In enacting the TCA, Congress

created a regulatory system that differs significantly from the dual regulatory system it established in the 1934 [Telecommunications] Act. That Act generally gave jurisdiction over interstate matters to the FCC and over intrastate matters to the states. The 1996 Act alter[ed] this framework, and expand[ed] the applicability of both national rules to historically intrastate issues, and state rules to historically interstate issues.²¹⁵

Prior to the passage of the TCA, local opposition to cell tower siting often prevented, or significantly delayed, approval of zoning applications for construction or modification of telecommunication towers.²¹⁶ In its report, the House Commerce Committee explained that

current State and local requirements, siting and zoning decisions by non-federal units of government, have created an inconsistent and, at times, conflicting patchwork of requirements which will inhibit the deployment of Personal Communications Services (PCS) as well as the rebuilding of a digital technology-based cellular telecommunications network. The Committee believes it is in the national interest that uniform, consistent requirements,

State RPS programs share the common goal of encouraging renewable energy supply, but design variations among states are so stark that there is even some debate over what exactly constitutes an RPS, and whether certain states qualify as having one. The tailoring of RPS designs to satisfy particular state objectives and political exigencies is a typical aspect of state policy making, ensuring that U.S. states serve as "laboratories" for RPS policy experimentation.

WISER & BARBOSE, *supra* note 5, at 6.

214. See Weiser, *supra* note 27, at 1739 (discussing cooperative federalism in the context of the TCA).

215. Implementation of the Local Competition Provisions in the Telecommunications Act of 1996, First Report and Order, 11 F.C.C.R. 15,499, 15,544 ¶ 83 (1996).

216. See Eagle, *supra* note 186, at 455-57 (describing NIMBY opposition to cell tower siting); see also David W. Hughes, *When NIMBYs Attack: The Heights to Which Communities Will Climb to Prevent the Siting of Wireless Towers*, 23 J. CORP. L. 469, 483 (1998) (noting that NIMBYs bring serious challenges to the industry "[b]ecause the wireless industry must receive permission from local zoning boards to build new towers and antennas").

with adequate safeguards of the public health and safety, be established as soon as possible.²¹⁷

The TCA's approach to siting telecommunication facilities is in keeping with the Act's general embrace of cooperative federalism.²¹⁸ Prior to the passage of the Telecommunication Siting Policy, Congress considered a proposal that, like the LNG siting provisions of the 2005 Energy Act,²¹⁹ would have granted nearly exclusive siting authority over telecommunication towers to a federal agency.²²⁰ The House "Facilities Siting Policies" called for the Federal Communications Commission ("FCC") to establish a negotiated rulemaking committee to develop substantive policies related to wireless facilities siting.

In developing such national siting policies, the committee was to consider:

(i) the desirability of enhancing the coverage and quality of commercial mobile services and fostering competition in the provision of such services; (ii) the legitimate interests of State and local governments in matters of exclusively local concern; (iii) the effect of State and local regulation of facilities siting on interstate commerce; and (iv) the administrative costs to State and local governments of reviewing requests for authorization to locate facilities²²¹

The House Bill's almost complete preemption of local zoning generated considerable opposition.²²² In contrast, the corresponding Senate Bill did not address telecommunications siting.²²³ Ultimately, the

217. H.R. REP. NO. 104-204, pt. 1, at 94 (1995), *reprinted in* 1996 U.S.C.C.A.N. 10, 61.

218. *See* Weiser, *supra* note 27, at 1739 (discussing the TCA's overlapping federal and state regulatory power).

219. 15 U.S.C. § 717b(e)(1) (2006).

220. *See* H.R. REP. NO. 104-204, at 25.

221. *Id.*

222. *See* Eagle, *supra* note 186, at 460-61. The House Commerce Committee acknowledged local officials' concerns about federal intervention in zoning by noting that:

The Committee recognizes that there are legitimate State and local concerns involved in regulating the siting of such facilities and believes the negotiated rulemaking committee should address those matters, such as aesthetic values and the costs associated with the use and maintenance of public rights-of-way. The intent of the Committee is that requirements resulting from the negotiated rulemaking committee's work and subsequent Commission rulemaking will allow construction of a CMRS network at a lower cost for siting and construction compatible with legitimate public health, safety and property protections while fully addressing the legitimate concerns of all affected parties and providing certainty for planning and building.

H.R. REP. NO. 104-204, at 94-95.

223. *See generally* S. 652, 104th Cong. (1995) (making no mention of telecommunications siting).

House-Senate conference committee adopted a scaled-down version of the House's siting policy that left primary siting responsibility with local authorities, but placed a number of substantive and procedural limitations on the siting process.

Substantively, the Telecommunication Siting Policy prevents localities from "unreasonably discriminat[ing] among providers of functionally equivalent services" and from "prohibiting the provision of personal wireless services."²²⁴ The Telecommunication Siting Policy also prevents localities from regulating wireless facilities "on the basis of the environmental effects of radio frequency emissions to the extent that such facilities comply with [FCC] regulations."²²⁵

Procedurally, the Telecommunication Siting Policy requires local governments to respond to any request for authorization to place or construct a cell phone tower "within a reasonable period of time . . . taking into account the nature and scope of such request."²²⁶ It further requires the local government response "be in writing and supported by substantial evidence contained in a written record."²²⁷ In addition, the Telecommunication Siting Policy creates a judicial right of action, allowing persons aggrieved under the Act to take their claims to federal court and requiring the court to hear and decide the claim on an expedited basis.²²⁸

The TCA does not otherwise preempt state regulation of cell tower siting.²²⁹ Instead, within the contours of the Telecommunication Siting Policy, states remain free to experiment with cell tower siting and tailor policies to local preferences. North Carolina, for example, supplements the federal Telecommunication Siting Policy with its own statewide statutory scheme.²³⁰ The North Carolina law was enacted to establish consistent, statewide standards that preserve local zoning authority but curb practices that have apparently prevented wireless coverage

224. 47 U.S.C. § 332(c)(7)(B)(i)(I)-(II) (2006).

225. *Id.* § 332(c)(7)(B)(iv).

226. *Id.* § 332(c)(7)(B)(ii).

227. *Id.* § 332(c)(7)(B)(iii).

228. *Id.* § 332(c)(7)(B)(v).

229. The TCA explicitly provides that "[e]xcept as provided in this paragraph, nothing in this chapter shall limit or affect the authority of a State or local government or instrumentality thereof over decisions regarding the placement, construction, and modification of personal wireless service facilities." *Id.* § 332(c)(7)(A); see also Robert B. Foster & Mitchell A. Carrel, *Patchwork Quilts, Bumblebees, and Scales: Cellular Networks and Land Use Under the Telecommunications Act of 1996*, 36 URB. LAW. 399, 400 (2004).

230. See generally S. 831, 2007 Sess. 526 (N.C. 2007) (codified at N.C. GEN. STAT. §§ 160A-400.50-.53 (2007)).

expansion in the state.²³¹ While not preempting local control, the North Carolina law clearly sets parameters that local governments must follow in reviewing siting applications. For example, the law sets time limits within which local governments must respond to siting applications, requires permit fees to be reasonable, and prohibits application reviewers from evaluating the applicant's business (review is limited to public safety, land development, or zoning issues).²³²

C. Elements of a Federal Wind Siting Policy

Since the passage of the TCA, courts have worked to balance the twin aims of the Telecommunication Siting Policy, weighing the national interest in deploying a national telecommunication network against the desire to preserve state and local control over land use matters.²³³ As the First Circuit observed, "[t]he statute's balance of local autonomy subject to federal limitations does not offer a single 'cookie cutter' solution for diverse local situations. . . . Congress conceived that this course would produce . . . individual solutions best adapted to the needs and desires of particular communities."²³⁴ Overall, the Telecommunication Siting Policy has proven effective in facilitating cell tower siting. Since the Telecommunication Siting Policy was enacted, the number of cell towers has increased dramatically, from 19,844 in 1995 to 245,912 in 2009.²³⁵ Moreover,

[t]he combination of local authority constrained by federal law has encouraged municipal zoning officials to identify those places in their community where cell phone towers would produce the least aesthetic harms, rather than trying to ban such towers altogether. . . . The TCA also encourages cellular providers to research the propriety of possible

231. *See id.*

232. *Id.*

233. *See* U.S. Cellular Corp. v. City of Wichita Falls, 364 F.3d 250, 253 (5th Cir. 2004) ("The Telecommunications Act of 1996 balances two competing concerns. . . . On one hand, Congress found that 'siting and zoning decisions by non-federal units of government[] have created an inconsistent and, at times, conflicting patchwork of requirements' for companies seeking to build wireless communications facilities. On the other hand, Congress 'recognize[d] that there are legitimate State and local concerns involved in regulating the siting of such facilities.'" (citing H.R. REP. NO. 104-204, pt. 1, at 94 (1995), *reprinted in* 1996 U.S.C.C.A.N. 10, 61) (alteration in original)); ATC Realty, L.L.C. v. Town of Kingston, 303 F.3d 91, 94 (1st Cir. 2002) (describing twin aims of Siting Policy); *see also* Robert B. Foster, *A Novel Application: Recent Developments in Judicial Review of Land Use Regulation of Cellular Telecommunications Facilities Under the Telecommunications Act of 1996*, 40 URB. LAW. 521, 521 (2008) (same).

234. *Town of Amherst v. Omnipoint Commc'ns Enters.*, 173 F.3d 9, 17 (1st Cir. 1999).

235. CTIA Advocacy, *Wireless Quick Facts*, <http://www.ctia.org/advocacy/research/index.cfm/AID/10323> (last visited Jan. 19, 2010).

sites for a new cell phone tower rather than simply choosing a site and then trying to force local officials to approve it. . . .²³⁶

The TCA provides a good model for federal-local cooperation in land use siting because, in many ways, local opposition to cell phone towers parallels local opposition to wind turbines. Both engender local opposition because they impose direct costs on the communities in which they are located but provide dispersed societal benefits.²³⁷ Given the similarities in local opposition to telecommunication towers and wind turbines, and the national interests at stake in each area, policy makers should look to the TCA for guidance in drafting a national wind siting policy.

In particular, a federal wind siting policy should: (a) prohibit local governments from banning wind energy facilities; (b) require local governments to make decisions on wind siting within a reasonable period of time; and (c) require such decisions to be made in writing and supported by substantial evidence.

The recommendations here are mainly procedural. It should be noted that the Telecommunication Siting Policy also substantively prohibits local governments from regulating on the basis of radio frequency emissions, to the extent that applicants comply with the FCC's radio frequency emissions standards.²³⁸ The Telecommunication Siting Policy thus sets a federal ceiling on regulations designed to mitigate the health and safety effects of radio frequency emissions and fully preempts state and local efforts to adopt more stringent or different guidelines.²³⁹ On the basis of this provision, courts have overturned zoning decisions influenced by health and safety concerns.²⁴⁰

Given the relative newness of wind energy technology and the vast geographic and demographic variations amongst wind-rich communities, Congress should avoid adopting a substantive ceiling on wind energy

236. John Copeland Nagle, *Cell Phone Towers as Visual Pollution*, 23 NOTRE DAME J.L. ETHICS & PUB. POL'Y 537, 564 (2009).

237. See Eagle, *supra* note 186, at 454-56; see also Hughes, *supra* note 216, at 483; Miller, *supra* note 82; Nagle, *supra* note 236, at 548-49.

238. 47 U.S.C. § 332(c)(7)(B)(iv) (2006).

239. See Buzbee, *supra* note 195, at 147.

240. Telespectrum, Inc. v. Pub. Serv. Comm'n of Ky., 227 F.3d 414, 424 (6th Cir. 2000) (finding that environmental effects are not substantial evidence for denying a permit); see also Cellular Tel. Co. v. Town of Oyster Bay, 166 F.3d 490, 494 & n.2, 495 (2d Cir. 1999) (finding that health effects are not legitimate reasons for denial); SBA Commc'ns, Inc. v. Zoning Comm'n, 112 F. Supp. 2d 233, 241 (D. Conn. 2000) (finding that the TCA prohibits the denial of a zoning permit based on the zoning board's belief of harmful environmental and health effects).

facilities siting.²⁴¹ Instead, at this time, sub-national governments should be given some freedom to experiment with the substance of siting policies, in the hopes that the resulting variation in regulatory policy might ultimately produce a better result.²⁴²

1. No Prohibition of Wind Facilities

The Telecommunication Siting Policy of the TCA forbids any regulation that would prohibit the provisions of personal wireless services.²⁴³ Thus, localities can regulate the location of cell phone towers, but cannot exclude them entirely from the jurisdiction.²⁴⁴ Although courts have divided over precisely when local regulations “have the effect of prohibiting” wireless service,²⁴⁵ it is clear that a municipality may not enact an express ban on cell phone towers.²⁴⁶

A federal wind siting statute could, similarly, preempt local regulations that exclude, or have the effect of excluding, wind energy facilities from a jurisdiction with wind energy potential. A similar requirement is in place in New Hampshire, where a state law prevents localities from unreasonably limiting wind installations.²⁴⁷ A federal

241. See *supra* notes 208-19.

242. See *supra* Part III.A (discussing various state and local government approaches to wind energy siting).

243. 47 U.S.C. § 332(c)(7)(B)(i)(II).

244. See H.R. REP. NO. 104-458, at 208 (1996) (Conf. Rep.), reprinted in 1996 U.S.C.C.A.N. 124, 222-23 (explaining that Congress intended localities to make decisions on a case-by-case basis rather than adopt blanket bans or moratoria).

245. Compare *USCOC of Va. RSA No. 3, Inc. v. Montgomery County Bd. of Supervisors*, 343 F.3d 262, 268 (4th Cir. 2003) (finding that “the statute should be interpreted to provide relief only upon a showing of a blanket ban of wireless facilities”), with *Town of Amherst v. Omnipoint Commc’ns Enters.*, 173 F.3d 9, 14 (1st Cir. 1999) (“Obviously, an individual denial is not automatically a forbidden prohibition violating the ‘effects’ provision. But neither can we rule out the possibility that—based on language or circumstances—some individual decisions could be shown to reflect, or represent, an effective prohibition on personal wireless service.”) and *Second Generation Props., L.P. v. Town of Pelham*, 313 F.3d 620, 630 (1st Cir. 2002) (holding that an effective prohibition exists (a) where the town sets or administers criteria which are impossible for any applicant to meet and (b) “where the plaintiff’s existing application is the only feasible plan; in that case, denial of the plaintiff’s application ‘might amount to prohibiting personal wireless service’”).

246. See *Foster*, *supra* note 233, at 529-30.

247. The New Hampshire law expressly provides that “[o]rdinances or regulations adopted by municipalities to regulate the installation and operation of small wind energy systems shall not unreasonably limit such installations or unreasonably hinder the performance of such installations.” N.H. REV. STAT. ANN. § 674:63 (West Supp. 2009). The statute expressly states that “unreasonable” behavior includes excluding wind turbines from a municipality; using a generic ordinance to restrict tower height; requiring setbacks greater than 150% of a turbine’s height; setting noise limits lower than fifty-five decibels; and fixing electrical and structural standards that are more restrictive than applicable state and federal building and electrical codes. *Id.*

wind siting policy that preempted local regulations that unreasonably exclude wind installations would aid in the deployment of wind energy technology by overcoming NIMBY efforts to keep wind turbines entirely out of wind-rich communities.

2. Decisions Within a Reasonable Time

The Telecommunication Siting Policy requires local governments to act on telecommunication siting requests within a reasonable time “taking into account the nature and scope of such request.”²⁴⁸ The legislative history indicates that in requiring that zoning decisions be made within a “reasonable” time, Congress did not intend “to give preferential treatment to the personal wireless service industry in the processing of requests, or to subject their requests to any but the generally applicable time frames for zoning decision.”²⁴⁹ According to one court, “the term ‘reasonable’ was no doubt used to allow local authorities the flexibility to consider each application on its individual merit. As recognized by the express language of the TCA, what is reasonable will necessarily depend upon the nature and scope of each request.”²⁵⁰

In November 2009, the FCC issued a declaratory ruling to provide guidance on the time frame that would be considered “reasonable” under the statute.²⁵¹ Under the FCC ruling, zoning boards must respond to requests for collocation within ninety days and requests for new tower construction within 150 days.²⁵² According to the FCC, the ruling “achieves a balance by defining reasonable and achievable timeframes for State and local governments to act on zoning applications while not dictating any substantive outcome on any particular case or otherwise limiting State and local governments’ fundamental authority over local land use.”²⁵³

248. 47 U.S.C. § 332(c)(7)(B)(ii).

249. H.R. REP. NO. 104-458, at 208 (1996) (Conf. Rep.), *reprinted in* 1996 U.S.C.A.N. 124, 223; *see also* N.Y. SMSA Ltd. P’ship v. Riverhead Town Bd., 118 F. Supp. 2d 333, 341 (E.D.N.Y. 2000), *aff’d*, 45 F. App’x 24 (2d Cir. 2002) (finding that “reasonable” was used to allow zoning boards flexibility in the amount of time they have to consider each application).

250. N.Y. SMSA Ltd. P’ship, 118 F. Supp. 2d at 341.

251. *In re Declaratory Ruling to Clarify Provisions of Section 332(c)(7)(B) to Ensure Timely Siting Review & to Preempt Under Section 253 State & Local Ordinances that Classify All Wireless Siting Proposals as Requiring a Variance*, 24 F.C.C.R. 13,994, 13,995 (2009).

252. *Id.*

253. *FCC Issues Declaratory Ruling Establishing Timeframes for State and Locality Processing of Applications for Wireless Towers*, FCC NEWS (FCC, Wash. D.C.), Nov. 18, 2009, at 1, available at http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-294711A1.pdf.

Wind developers would similarly benefit from a federal framework that sets reasonable time limits within which decisions on wind siting must be made. Such a time frame would prevent local communities from using the permitting process to perpetually delay siting, resulting in less fiscal waste and quicker access to renewable energy.

3. Decisions in Writing and Supported by Substantial Evidence

The Telecommunication Siting Policy requires local land use decisions regarding telecommunication siting to be in writing and supported by substantial evidence contained in a written record.²⁵⁴ The Sixth Circuit has explained that “a governmental unit’s decision must (1) be separate from the written record, (2) describe the reasons for the denial, and (3) contain a sufficient explanation of the reasons for the denial to allow a reviewing court to evaluate the evidence in the record that supports those reasons.”²⁵⁵ In contrast, other courts accept any writing, including the minutes of the meeting at which the decision was made.²⁵⁶

In addition to the writing requirement, the Telecommunication Siting Policy creates a check on the local zoning process by subjecting land use decisions to a heightened standard of judicial review. Judicial review of local land use decisions is notoriously deferential.²⁵⁷ In its

254. 47 U.S.C. § 332(c)(7)(B)(ii)-(iii) (2006).

255. *Omnipoint Holdings, Inc. v. City of Southfield*, 355 F.3d 601, 605 (6th Cir. 2004); *see also New Par v. City of Saginaw*, 301 F.3d 390, 395-96 (6th Cir. 2002); *Sw. Bell Mobile Sys., Inc. v. Todd*, 244 F.3d 51, 60 (1st Cir. 2001).

256. *See AT & T Wireless PCS, Inc. v. Winston-Salem Zoning Bd. of Adjustment*, 172 F.3d 307, 312-13 (4th Cir. 1999) (secretary writing “denied” on application suffices); *AT & T Wireless PCS, Inc. v. City Council of Va. Beach*, 155 F.3d 423, 429 (4th Cir. 1998) (minutes and letter with word “denied” held to be enough); *BellSouth Mobility, Inc. v. Parish of Plaquemines*, 40 F. Supp. 2d 372, 377-78 (E.D. La. 1999) (letter and documentary record enough; TCA does not require written reasons); *Flynn v. Burman*, 30 F. Supp. 2d 68, 75 (D. Mass. 1998) (letter conveying decision sufficient); *PrimeCo Pers. Commc’ns, L.P. v. Vill. of Fox Lake*, 26 F. Supp. 2d 1052, 1062 (N.D. Ill. 1998) (trustee minutes satisfied the writing requirement); *Gearon & Co. v. Fulton County*, 5 F. Supp. 2d 1351, 1354 (N.D. Ga. 1998) (brief written notice sufficient); *Sprint Spectrum L.P. v. Town of North Stonington*, 12 F. Supp. 2d 247, 252 (D. Conn. 1998) (attorney’s letter adopted by commission satisfied in-writing requirement “on very thin ice”).

257. *See Restigouche, Inc. v. Town of Jupiter*, 59 F.3d 1208, 1214 (11th Cir. 1995) (“The proper inquiry is concerned with the *existence* of a conceivably rational basis, not whether that basis was actually considered by the legislative body.” (quoting *Panama City Med. Diagnostic Ltd. v. Williams*, 13 F.3d 1541, 1547 (11th Cir. 1994))); *Dodd v. Hood River County*, 59 F.3d 852, 865 (9th Cir. 1995) (holding that a zoning action will be upheld so long as “the issue of whether the County acted arbitrarily and without a legitimate and rational basis for its decision is ‘at least debatable’”); *City of Lilburn v. Sanchez*, 491 S.E.2d 353, 355 (Ga. 1997) (holding that under the rational basis test “any plausible or arguable reason that supports an ordinance will satisfy substantive due process”); *Mayor of Aldermen v. Estate of Lewis*, 963 So. 2d 1210, 1214 (Miss. Ct. App. 2007) (discussing arbitrary and capricious or reasonableness review of zoning amendment).

landmark decision of *Village of Euclid v. Ambler Realty Co.*, the Supreme Court held that a zoning ordinance violates due process only if it is “clearly arbitrary and unreasonable, having no substantial relation to the public health, safety, morals, or general welfare.”²⁵⁸ State courts generally accord local zoning decisions a presumption of validity and refuse to overturn them unless they are arbitrary, capricious, or unreasonable.²⁵⁹ Federal courts apply an even more deferential “shocks the conscience” standard to local administrative acts.²⁶⁰

In contrast, the Telecommunication Siting Policy requires that all decisions to deny a wireless service facilities siting request be “supported by substantial evidence contained in a written record.”²⁶¹ In *Cellular Telephone Co. v. Town of Oyster Bay*, the Second Circuit explained the impact of the substantial evidence requirement as follows:

Traditionally, the federal courts have taken an extremely deferential stance in reviewing local zoning decisions, limiting the scope of inquiry to the constitutionality of the zoning decision under a standard of rational review. Although Congress explicitly preserved local zoning authority in all other respects over the siting of wireless facilities, the method by which siting

decision); *Bradley v. Payson City Corp.*, 70 P.3d 47, 50 (Utah 2003) (stating that zoning amendment decisions are upheld unless “arbitrary and capricious or otherwise illegal”); 2 SALKIN, *supra* note 93, §§ 15:2 to:3, at 6-25; Ostrow, *supra* note 85, at 730 (describing deferential standard of review).

258. *Vill. of Euclid v. Ambler Realty Co.*, 272 U.S. 365, 395 (1926).

259. More specifically, zonings and rezonings are considered legislative actions and are reviewed under a highly deferential “fairly debatable” rule, which has also been termed the “anything goes” rule. *See Prete v. City of Morgantown*, 456 S.E.2d 498, 500 (W. Va. 1995) (“In passing upon an ordinance imposing zoning restrictions courts will not substitute their judgment for that of the legislative body charged with the duty of determining the necessity for and the character of zoning regulations and, where the question whether they are arbitrary or unreasonable is fairly debatable, will not interfere with the action of the public authorities.” (quoting *Carter v. City of Bluefield*, 54 S.E.2d 747, 761 (W. Va. 1949))); Charles L. Siemon & Julie P. Kendig, *Judicial Review of Local Government Decisions: “Midnight in the Garden of Good and Evil,”* 20 NOVA L. REV. 707, 712-15 (1996) (discussing how the application of the *Euclid* standard has been complicated by the “fairly debatable rule”). Even Planning Commission decisions that are not affirmed by the local legislative body are accorded legislative deference. *See, e.g., Harris v. Zoning Comm’n of New Milford*, 788 A.2d 1239, 1251 (Conn. 2002) (stating that courts will not disturb zoning commission decisions unless they are “clearly contrary to law” or there was an “abuse of discretion”); *Markland v. Jasper County Planning & Dev. Dep’t.*, 829 N.E.2d 92, 96 (Ind. Ct. App. 2005) (applying the “clearly erroneous” standard and presumption of correctness to planning board decisions); *Auger v. Town of Strafford*, 931 A.2d 1213, 1216 (N.H. 2007) (describing the deferential reasonableness standard for review of planning board decision); *see also* Ostrow, *supra* note 85, at 729-31.

260. *See, e.g., Natale v. Town of Ridgefield*, 170 F.3d 258, 262-63 (2d Cir. 1999); *Anderson v. Douglas County*, 4 F.3d 574, 577 (8th Cir. 1993).

261. 47 U.S.C. § 332(c)(7)(B)(iii) (2006).

decisions are made is now subject to judicial oversight. Therefore, *denials subject to the TCA are reviewed by this court more closely than standard local zoning decisions.*²⁶²

Although the term “substantial evidence” is not defined in the statute, Congress indicated that courts should employ “the traditional standard used for judicial review of agency actions.”²⁶³ Generally, courts have interpreted this standard to require “such relevant evidence as a reasonable mind might accept as adequate to support a conclusion.”²⁶⁴ Substantial evidence typically requires, among other things, scientific and engineering studies to support and/or refute identified concerns.

A wind siting policy that requires zoning decisions to be made in writing would compel local officials to articulate the grounds for their decision. A written record would enable wind siting applicants to understand and respond to local concerns, and provide an official record for courts to review. In addition, the heightened “substantial evidence” standard of review would ensure that proposed projects are not denied solely on the basis of NIMBY concerns without careful consideration of the overall project benefits.

VI. CONCLUSION

Harnessing and using renewable energy is an important way that the United States can reduce its dependence on foreign oil and slow the

262. *Cellular Tel. Co. v. Town of Oyster Bay*, 166 F.3d 490, 493 (2d Cir. 1999) (citations omitted) (emphasis added); *see also Preferred Sites, LLC v. Troup County*, 296 F.3d 1210, 1218 (11th Cir. 2002) (finding that “substantial evidence” standard “requires courts to take a harder look than when reviewing under the arbitrary and capricious standard”); *BellSouth Mobility, Inc. v. Parish of Plaquemines*, 40 F. Supp. 2d 372, 377 (E.D. La. 1999) (standard of review more strict than usual “arbitrary and capricious” standard).

263. H.R. REP. NO. 104-458, at 208 (1996) (Conf. Rep.), *reprinted in* 1996 U.S.C.C.A.N. 124, 223.

264. *Cellular Tel. Co.*, 166 F.3d at 494; *see also Sw. Bell Mobile Sys., Inc. v. Todd*, 244 F.3d 51, 58 (1st Cir. 2001); *Omnipoint Corp. v. Zoning Hearing Bd. of Pine Grove Twp.*, 181 F.3d 403, 408 (3d Cir. 1999); *Telespectrum, Inc. v. Pub. Serv. Comm’n of Ky.*, 227 F.3d 414, 423 (6th Cir. 2000); *Preferred Sites, LLC*, 296 F.3d at 1218. In the context of local ordinances, however, some courts have cautioned that “[t]he ‘reasonable mind’ of a legislator is not necessarily the same as the ‘reasonable mind’ of a bureaucrat, and one should keep the distinction in mind when attempting to impose the ‘substantial evidence’ standard onto the world of legislative decisions.” *AT & T Wireless PCS, Inc. v. City Council of Va. Beach*, 155 F.3d 423, 430 (4th Cir. 1998). Applying this reasoning, the Fourth Circuit held in *AT & T Wireless* that the substantial evidence standard was fulfilled by the city council’s reliance on hearing transcripts and letters of opposition to the project. *Id.* Even though the planning commission and the planning department had recommended approving the project, the court explained that substantial evidence existed for the city council to reject the application because the local legislators had an obligation to consider their constituents’ opposition to the project. *Id.*

pace of global warming. The federal and state governments have recognized the importance of wind energy to meeting these goals. Despite the national importance of renewable energy, however, the wind siting process remains largely uncoordinated and subject to state and/or local control. As a result, wind siting regulations vary, not only between states, but also within state. This patchwork approach has created an inconsistent and unpredictable regulatory process that adds to the cost of renewable energy projects and enables local communities to prevent the siting of projects that would benefit the entire nation.

Though there are advantages to empowering local communities to regulate land use, in the context of wind energy more centralized regulation is desirable. Thus, this Article has proposed a national wind siting regime, modeled the Telecommunication Siting Policy that leaves primary siting authority in the hands of local zoning officials but places explicit federal constraints on the local decision-making process.

This regime would provide the regulatory uniformity necessary for the nationwide development of renewable energy, without sacrificing the benefits of local tailoring or experimentation. In addition, the hybrid federal-local approach would strike an appropriate balance between local concerns regarding wind turbine siting and the national interest in developing wind as a renewable domestic energy source.