RIDGELINES AND THE NATIONAL SECURITY IMPLICATIONS OF COMMERCIAL WIND ENERGY DEVELOPMENT IN VERMONT

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INTRODUCTION

In a groundbreaking article published in April 2011, two senior military officers working for the Joint Chiefs of Staff proposed a new strategic concept to guide the United States in its international engagement through a reprioritization of its domestic objectives.[1] Recognizing the complexities of the current international security situation, the *National Strategic Narrative* suggested treating international security as a strategic ecology, in which the U.S. would need to influence events rather than try to control them, and where notions of dominance must give way to the practice of sustainability.[2] In this context, the authors argued that the U.S.' priorities should be promoting the development of its youth through a "sustainable infrastructure of education, health, and social services," achieving a sustainable security posture that includes the conservation of resources, and the development of "a plan for sustainable access to, cultivation, and use of the natural resources" required "for our continued . . . economic growth."[3] This would allow the U.S. to continue to exert credible influence in world affairs, while serving as an example of stability and sustainability in an interdependent strategic ecosystem rather than an unsustainable, dominant force.[4] The Obama Administration's emphasis on developing renewable, clean energy sources, such as solar and wind power, would promote several complementary national energy security goals.[5] First, reducing the U.S.' reliance on foreign oil from politically unstable sources should decrease the likelihood that the U.S. economy will be held hostage by the policies of foreign petroleum producers, or even by terrorist attacks on overseas petroleum industry infrastructure or shipping lanes.[6] Second, greater use of renewable energy sources could lead to an increase in modern manufacturing capabilities and jobs in this area, which could help rebuild some of the economic base lost during the financial crisis that began in

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1. "MR. Y," A NATIONAL STRATEGIC NARRATIVE 5 (2011), *available at* http://www.wilsoncenter.org/sites/default/files/A%20National%20Strategic%20Narrative.pdf.

2. *Id.* at 8, 9, 11.

3. *Id.* at 8, 13.

4. *Id.* at 11.

5. *See, e.g.*, President Barack Obama, Weekly Address: Solar Power & a Clean Energy Economy (Oct. 2, 2010), http://www.whitehouse.gov/photos-and-video/video/2010/10/02/weekly-address-solar-power-a-clean-energy-economy.

6. Friedrich Steinhäusler et al., *Security Risks to the Oil and Gas Industry: Terrorist Capabilities*, STRATEGIC INSIGHTS 1 (Feb. 2008), *available at* http://www.nps.edu/Academics/centers/ccc/publications/OnlineJournal/2008/Feb/steinhauslerFeb08.pdf.

2008.[7] Third, increased use of domestic renewable energy sources should help mitigate the climate impact of fossil fuel-based carbon.[8] Finally, renewable energy sources do not pose the same sort of environmental, social, and economic problems that accompany the use of traditional, non-renewable energy resources, particularly fissile.[9]

Wind power, along with other renewable energy sources, supplies an ever-increasing percentage of the world's energy needs.[10] The availability of wind power also makes it an attractive energy source for countries concerned about both their dependence on foreign sources of fossil fuels[11] and reducing their carbon emissions from the generation of electricity.[12] Further, wind power uses almost no water, in contrast to energy generated from coal, natural gas, and fissile energy.[13] In addition, the price of wind is free, which means that fuel costs are not variable, so energy production costs over the expected lifetime of a wind turbine system can be calculated very accurately.[14] China has made great strides in bringing new wind power facilities on line, and it now has the largest amount of installed capacity in the world, but whether its power grid can efficiently handle all of the electricity generated is unclear.[15] The European Union has embarked on an

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7. *The Recovery Act, Promoting Clean, Renewable Energy: Investments in Wind and Solar*, THE WHITE HOUSE, http://www.whitehouse.gov/recovery/innovations/clean-renewable-energy (last visited June 15, 2012).

8. *Id.*

9. *See Fukushima Nuclear Accident Update Log*, INT'L ATOMIC ENERGY AGENCY NEWS CENTRE, http://www.iaea.org/newscenter/news/tsunamiupdate01.html (last updated June 2, 2012).

10. As of 2009, installed wind energy systems provided a capacity of 157,899 megawatts. *Table and Statistics, 2009*, GLOBAL WIND ENERGY COUNCIL, http://www.ewea.org/fileadmin/ewea_documents/documents/statistics/gwec/GWEC_-_Table_and_Statistics_2009.pdf (last visited July 15, 2012).

11. *Id.*

12. American Wind Energy Association, *Wind: A leading source of new electricity generation*, WINDPOWER OUTLOOK, 6 (2009) [hereinafter WINDPOWER OUTLOOK], *available at* www.clipperwind.com/pdf/Outlook_2009.pdf.

13. "Electricity generation accounts for nearly 50% of all water withdrawals in the nation, with irrigation withdrawals coming in second at 34%," and even though most is recycled, "approximately 1.6 to 1.7 trillion gallons [are] consumed for power generation each year." DEP'T OF ENERGY, 20% WIND ENERGY BY 2030: INCREASING WIND ENERGY'S CONTRIBUTION TO U.S. ELECTRICITY SUPPLY 16 (2008), *available at* http://www.nrel.gov/docs/fy08osti/41869.pdf.

14. EUROPEAN WIND ENERGY ASS'N, *WIND ENERGY -- THE FACTS, EXECUTIVE SUMMARY* 27–28 (2009) [hereinafter *Wind Energy*], *available at* http://www.ewea.org/fileadmin/ewea_documents/documents/publications/WETF/1565_ExSum_ENG.pdf.

15. *China Has Highest Windpower Capacity: Report*, REUTERS U.S. EDITION (Jan. 13, 2011), http://www.reuters.com/article/2011/01/13/us-china-power-wind-idUSTRE70C1FA20110113. Although the U.S. still had the greatest amount of wind power generation capacity in 2009, between 2007 and 2009 China installed almost 25,000 megawatts of capacity. Edward Milford, *World Market Update:*

ambitious plan for its members to provide half of their electricity needs through wind power by 2050.[16] Portugal, for example, began moving its electric generation towards renewable sources in 2005.[17] Today, over 15% of its electricity comes from wind power.[18] The economic impacts of wind energy development ripple beyond its increasing share of the energy market. Evolving technologies are producing ever more efficient wind turbine systems.[19] The manufacture of these new wind turbine systems promises to provide long-term employment for skilled workers across the global economy.[20] For example, international firms in the U.S., such as Siemens[21] and Vestas,[22] have achieved a strong market presence in the domestic commercial wind turbine industry.[23] Complementing the

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Strong Growth, Record Installations, RENEWABLE ENERGY WORLD INTERNATIONAL MAGAZINE (July–Aug. 2010), http://www.renewableenergyworld.com/rea/news/article/2010/07/btm-wind-market-report.

16. EUROPEAN WIND ENERGY ASS'N, THE EUROPEAN WIND INITIATIVE: WIND POWER RESEARCH AND DEVELOPMENT FOR THE NEXT TEN YEARS (June 2010), *available at* http://www.ewea.org/fileadmin/ewea_documents/documents/publications/EWI/EWI_2010_final.pdf (describing the European Commission's Strategic Energy Technology Plan).

17. Elisabeth Rosenthal, *Portugal Gives Itself a Clean-Energy Makeover*, N.Y. TIMES, Aug. 10, 2010, at A1, *available at* http://www.nytimes.com/2010/08/10/science/earth/10portugal.html?scp=1&sq=Portugal%20Gives%20itself%20a%20Clean-energy%20makeover&st=cse.

18. EUROPEAN WIND ENERGY ASS'N, WIND IN POWER, 2011 EUROPEAN STATISTICS, 11 (Feb. 2012), *available at* http://www.ewea.org/fileadmin/ewea_documents/documents/publications/statistics/Stats_2011.pdf.

19. *Wind Energy, supra* note 14, at 4, 13–14.

20. As of 2009, wind energy companies in the E.U. employed approximately 108,600 people. *Id.* at 18. There were an estimated 85,000 employees in wind energy companies in the U.S. as of December 2008. WINDPOWER OUTLOOK, *supra* note 12, at 1.

21. *E.g.*, *Siemens Receives Major Order for Wind Farm in Oklahoma, USA*, SIEMENS.COM (Aug. 10, 2010), http://www.siemens.com/press/en/pressrelease/?press=/en/pressrelease/2010/renewable_energy/ere201008111.htm; *See also* Jesse Lee, *Investing in America's Energy Security*, THE WHITE HOUSE BLOG, (Apr. 27, 2010, 4:57 PM), http://www.whitehouse.gov/blog/2010/04/27/investing-americas-energy-security (describing President Obama's visit to the Siemens Energy factory in Iowa).

22. Christopher Martin & Jim Polson, *GE, Vestas Lead U.S. Wind Turbine Sales, Taking 56% of Market*, BLOOMBERG, Apr. 12, 2009, http://www.bloomberg.com/apps/news?pid=newsarchive&sid=aU5YTxhhDvIE&refer=home. Vermont-based manufacturers have significant standing in the market for smaller wind turbines. Sven Gustafson, *Vermont wind turbine maker to establish production in Michigan*, MICHIGAN BUSINESS REVIEW (Mar. 3, 2009), http://www.michigangreen.org/article517.html.

23. The economic significance of the international wind power equipment market is reflected in tension between the U.S. and China over Chinese subsidization of its clean energy industries. *See generally* Michael Wines & Xiyun Yang, *China Escalates Fight with U.S. on Clean Energy Aid*, N.Y. TIMES, Oct. 17, 2010, at B1, *available at* http://www.nytimes.com/2010/10/18/business/global/18trade.html (describing the escaltion of the dispute between the U.S. and China over clean energy subsidies); Tom Zeller & Keith Bradsher, *China's Push Into Wind Worries U.S. Industry*, N.Y. TIMES, Dec. 15, 2010, at B1, *available at*

international nature of wind turbine manufacturing, many international energy companies have either invested in, or are seeking to develop, wind power projects in the U.S.[24] Although wind is not a complete answer to the growing human population's energy needs, the tremendous amount of investment in wind power systems across the world strongly suggests that it will be part of the solution.[25]

As a national leader in the promotion of legal measures that protect the environment and energy efficiency, Vermont is a credible example of sustainability in line with the goals of the *National Strategic Narrative*.[26] For example, Vermont's Act 250, which was promulgated to avoid undue adverse environmental impacts associated with major subdivisions and developments, was among the first laws of its kind in the nation.[27] The well-developed body of law concerning Act 250 from Vermont's district commissions, Environmental Court, and Supreme Court significantly informs the process by which decisions in Vermont are made on the siting, construction, and operation of energy generating facilities pursuant to title ten, section 248 of the Vermont Statutes, better known as the section 248 process. These legal protections are complemented by a social, cultural, and political reputation for fostering environmental stewardship and conservation.[28] Surprisingly, however, despite being the site of the first

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http://www.nytimes.com/2010/12/16/business/global/16wind.html?ref=business&pagewanted=print. (reporting that Chinese wind energy equipment manufacturers are working to break into U.S. market).

24. *See, e.g.*, David Sharp, *Companies Investing in Wind Energy Projects Need Stable Policies, CEO Says*, ASSOCIATED PRESS (Sep. 27, 2010), http://finance.yahoo.com/news/CEO-tells-AP-wind-investors-apf-2190551580.html?x=0 (reporting on CEO of Spanish utility Iberdrola discussing investments in U.S. energy projects).

25. Some estimates suggest that depending upon increases in demand for electricity, wind energy could provide perhaps as much as 11% of the world's electricity needs by 2020, and perhaps 20% by 2030. *Wind Energy*, *supra* note 14, at 28.

26. *See, e.g.*, Bruce Edwards, *New Law Keeps with Vt.'s Social Conscience*, RUTLAND HERALD, June 13, 2010, http://www.vermonttoday.com/apps/pbcs.dll/article?AID=/RH/20100613/BUSINESS/100 (describing recently enacted VT. STAT. ANN. tit. 11A, §§ 21.01–21.14 (2010) (Benefit Corporations), which allow the listing in a company's articles of incorporation public benefits the company promotes, such as the environment (§ 21.03(a)(6)(C)), and a standard of conduct for the company's directors which requires them to consider this interest in their decision-making); *The Environmental State of the Union: A Survey of Pollution, Energy Use and Policy in all 50 States*, 24/7 WALL ST (Dec. 16, 2010), http://www.247wallst.com/2010/12/16/the-environmental-state-of-the-union-a-survey-of-pollution-energy-use-and-policy-in-all-50-states/ (listing Vermont as greenest of the United States based on multiple cross-disciplinary criteria).

27. VT. STAT. ANN. tit. 10, §§ 6001–6093; CINDY CORLETT ARGENTINE, VERMONT ACT 250 HANDBOOK, vii, 1–2 (2008).

28. *See* THOMAS H. NAYLOR, THE VERMONT MANIFESTO: THE SECOND VERMONT REPUBLIC, 45–46, 54–58, 67–69 (2003); Vermont Law School's environmental program is rated as the best in the country. *Environmental Law*, U.S. NEWS AND WORLD REPORT, 2011, http://grad-

wind turbine in the U.S.,[29] the first commercial wind power facility in the Eastern U.S.,[30] and one of only two states without a coal burning energy plant,[31] commercial wind power development in Vermont has lagged behind other states. Vermont has only two operating commercial wind power facilities at the time of this writing, which are capable of generating only 46 megawatts.[32] The Vermont Public Service Board's (PSB) recent approvals of additional wind power generating facilities possibly suggest that this trend is changing, but there is very strong opposition to the use of commercial wind power in many parts of the state.[33] Given Vermont's apparently warm embrace of environmental stewardship in general, why has a green energy resource, such as wind power, met such a chilly reception in the Green Mountains? The answer, in a word, is "ridgelines"—and the competing environmental concerns that flow from building wind power stations on them.[34]

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schools.usnews.rankingsandreviews.com/best-graduate-schools/top-law-schools/environmental-law-rankings. One Vermont college, Middlebury, has been ranked one of the ten greenest campuses in the U.S., with two of the seven honorable mention colleges also being in Vermont (Green Mountain College and the University of Vermont). Brian Clark Howard, *12 of the Greenest Colleges in America*, THEDAILYGREEN, http://www.thedailygreen.com/green-homes/eco-friendly/greenest-colleges-460429?click=main_sr (last visited June 15, 2012).

29. J. F. MANWELL et. al., WIND ENERGY EXPLAINED: THEORY, DESIGN AND APPLICATION 15 (2002); VT. DEP'T OF PUB. SERV., WIND ENERGY PLANNING RESOURCES FOR UTILITY-SCALE SYSTEMS IN VERMONT, REPORT OF THE WIND SITING CONSENSUS BUILDING PROJECT 7 (2002), *available at* http://publicservice.vermont.gov/energy/ee_files/wind/PLANNINGPACKET.pdf.

30. DEP'T OF PUB. SERV., VERMONT COMPREHENSIVE ENERGY PLAN, 2011, VOL II, FACTS, ANALYSIS, AND RECOMMENDATIONS, 116 (2011), *available at* http://www.vtenergyplan.vermont.gov/sites/cep/files/2011%20CEP_Volume%202.pdf [hereinafter CEP].

31. *Vermont Overview*, U.S. ENERGY INFORMATION ADMINISTRATION, http://eia.doe.gov/state/state-energy-profiles.cfm?sid=VT (last visited June 15, 2012).

32. DEP'T. OF PUB. SERV., VERMONT COMPREHENSIVE ENERGY PLAN, EARLY 2011 STAKEHOLDER ENGAGEMENT DRAFT, III-52 (Mar. 2011) [hereinafter Draft CEP], *available at* http://www.vtenergyplan.vermont.gov/sites/cep/files/CEP%20Draft%20Public%20Review%202008-2011.pdf. Texas, however, has 9,708 MW of wind generation capacity. *AWEA Mid-Year 2010 Market Report*, AMERICAN WIND ENERGY ASSOCIATION (July 2010), *available at* http://www.awea.org/learnabout/publications/upload/2Q10.pdf.

33. *See* Laura Carpenter, *NVDA Supports Wind Moratorium*, NEWPORTDAILYEXPRESS.COM (July 1, 2012), http://newportvermontdailyexpress.com/content/nvda-supports-wind-moratorium (regional development board votes overwhelmingly to suspend commercial wind projects for three years); *West Rutland Opposes Wind Project*, WCAX.COM (June 28, 2012) (proposed 20 turbine project opposed by selectboards in all four towns in which it would be built); Kathryn Flagg, On the Canadian Border, a Wind Project Sparks International Intrigue, 7dvt.com (May 9, 2012), http://www.7dvt.com/2012canadian-border-wind-project-sparks-international-intrigue (local and Canadian opposition to proposed wind power facility).

34. The PSB has noted "that consideration of wind generation facilities requires a balancing of two fundamental state policies: promoting in-state renewable resources, and protecting Vermont's

Wind resource mapping of Vermont has shown that the highest grade wind resources are associated with elevation; specifically, the ridgelines of the different ranges that compose the Green Mountains, which are generally over 2,500 feet in elevation, and which run north to south along the length of the state.[35] However, these ridgelines have tremendous aesthetic appeal, both for nearby residents and for the economically important tourism industry. Ridgelines also have pronounced environmental significance because of the uncommon natural communities found at those altitudes and the potential effects of natural community fragmentation resulting from building wind power stations along the length of the ridgeline. Although Vermont's particular circumstances may not necessarily be found in other states, it is not alone in having to resolve contentious siting issues regarding wind power stations.[36] At least 30 states have some degree of environmental consideration embedded in their siting decision processes.[37] Similarly, the use of federal property for wind power, whether on[38] or off-shore,[39] triggers requirements under the National Environmental Policy Act to assess criteria

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ridgelines." Amended Petition of UPC Vermont Wind, LLC, for a Certificate of Public Good at 69, Docket No. 7156 (Vt. Pub. Serv. Bd. Aug. 8, 2007) [hereinafter Sheffield], http://psb.vermont.gov/sites/psb/files/orders/2007/7156_Final_Order.pdf.

35. VERMONT ENVIRONMENTAL RESEARCH ASSOCIATES INC., ESTIMATING THE HYPOTHETICAL WIND POWER POTENTIAL ON PUBLIC LANDS IN VERMONT 13–14 (2003), *available at* http://publicservice.vermont.gov/energy/ee_files/wind/final-public-lands-report-04_feb.pdf. Although the land owned by the state, which is both suitable for commercial wind and free of legal restrictions on its use, is relatively small, "[i]n interior New England, commercial-scale wind turbine development would in occur in rows, or turbine strings, along the length of ridges, so a hypothetical estimate of the wind energy potential in Vermont can be more appropriately based on length of linear ridgeline available, rather than by land area." *Id.* at 14–15 (emphasis in original).

36. "New York State's strong tradition of municipal home rule has required commercial wind developers to seek permitting at the town level. This has set the stage for lengthy and difficult permitting battles, and made project siting a contentious issue across the state." TODD OLINSKY-PAUL, COMMUNITY WIND ENERGY: MODELS, OPPORTUNITIES AND ISSUES FOR NEW YORK STATE 7 (2009), *available at* http://law.pace.edu/enewsletter/weekly/docs/CommunityWindEnergy.pdf.

37. Michael Dworkin et al., *Revisiting the Environmental Duties of Public Utility Commissions*, 7 VT J. ENVTL. L. 1, 3 (2006).

38. *See, e.g.*, FINAL PROGRAMMATIC ENVIRONMENTAL IMPACT STATEMENT ON WIND ENERGY DEVELOPMENT ON BLM-ADMINISTERED LANDS IN THE WESTERN UNITED STATES, U.S. DEP'T OF THE INTERIOR, BUREAU OF LAND MGMT. (2005), *available at* http://windeis.anl.gov/documents/fpeis/maintext/Vol1/Vol1ExecSum.pdf ("The BLM has determined that the establishment of a Wind Energy Development Program would be a major federal action as defined by the National Environmental Policy Act of 1969 (NEPA).").

39. *See, e.g.*, MINERALS MGMT. SERV., CAPE WIND FINAL ENVIRONMENTAL IMPACT STATEMENT (2009), *available at* http://www.boemre.gov/offshore/renewableenergy/CapeWind.htm (noting NEPA compliance through the issuing of an Environmental Assessment and Finding of No Significant Impact in the Cape Wind Project); MINERALS MGMT. SERV., OCS ALTERNATIVE ENERGY AND ALTERNATE USE PROGRAMMATIC EIS INFORMATION CENTER (2007), *available at* http://www.ocsenergy.anl.gov/.

similar to those reviewed under section 248, although the two processes differ markedly in the effects of their respective assessments.

This article argues that Vermont's holistic approach[40] should be seen as a practical way forward in providing a credible example of reconciling valid competing sustainability interests consistent with the broad scope of the *National Strategic Narrative*. First, this article will briefly describe the structure and policies of the Vermont state and local governments as they are relevant to wind power dockets before the PSB. Second, this article will describe the role and processes of the PSB in handling petitions for certificates of public good from wind power developers. The third part of this article will examine PSB decisions in more recent wind power dockets[41] to flesh out the jurisprudence of this quasi-judicial body regarding commercial wind power projects, especially with regard to the most controversial issues. These issues include public health; economic and societal benefits; the environmental factors of aesthetics, wildlife and wildlife habitat; and the role of public support for wind power projects. The fourth part of this article will take a case study approach to examine how the most recent wind power docket, the proposed Lowell Mountain project, played out against the precedential background of prior wind power dockets, and will evaluate how the developer met the legal requirements necessary for the PSB to issue a certificate of public good. In conclusion, this article will show how the Lowell Mountain docket could serve as a potential example of best practices in pursuing wind power development—not just in Vermont, but in other states as well, especially those with strong environmental ethics and laws. This article will also show how the Lowell Mountain docket could potentially work in the federal domain, as communities, industry, and interest groups grapple with the issues of achieving sustainability in the face of competing positive environmental values.[42]

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40. John A. Sautter & Donald M. Kreis, *Energy Siting in the Green Mountains: Why Vermont's Holistic Approach Works*, 35 VER. B. J. & L. DIG. 48, 49–51 (2009).

41. Petition of Georgia Mountain Community Wind, LLC for a Certificate of Public Good, Docket No. 7508 (Vt. Pub. Serv. Bd. June 11, 2010) [hereinafter Georgia Mountain], http://psb.vermont.gov/sites/psb/files/orders/2011/7508%20Final%20Order.pdf; Amended Petition of Deerfield Wind, LLC for a Certificate of Public Good, Docket No. 7250, (Vt. Pub. Serv. Bd. Apr. 16, 2009), http://www.state.vt.us/psb/orders/2009/files/7250finalorder.pdf [hereinafter *Deerfield*]; Sheffield, *supra* note 32; *Petition of EMDC, LLC, d/b/a East Haven Windfarm, for a Certificate of Public Good*, Docket No. 6911, (Vt. Pub. Serv. Bd. July 17, 2006) [hereinafter East Haven], http://www.state.vt.us/psb/orders/2006/files/6911fnl.pdf.

42. *See* Joint Statement in Support of Wind Power Development in Vermont, press release from the Conservation Law Foundation, the Vermont League of Conservation Voters, the Vermont Natural Resources Council, and the Vermont Public Interest Group, Oct. 20, 2010,

I. STATE AGENCIES AND POLICY

A. The Agencies

The PSB is composed of a chairperson and two members.[43] Although none of the members are required to be practicing Vermont lawyers,[44] the chairperson is "nominated, appointed and confirmed in the manner of a superior court judge."[45] The PSB members serve six-year terms,[46] and two members are sufficient to constitute a quorum. The PSB conducts quasi-judicial hearings on energy utility issues, and its authority is extensive.[47] PSB decisions are given the same effect as court decisions,[48] and may be appealed to the Vermont Supreme Court.[49] The Vermont Supreme Court gives "'great deference' to the [PSB's] expertise and judgment, and 'accord[s] a strong presumption of validity to the [PSB's] orders.'"[50]

The PSB wields significant regulatory power over the operations of public utilities in Vermont. In doing so, its purpose is to promote a rational and efficient public utility system from a statewide perspective, rather than letting purely local interests predominate.[51] It controls the movement of energy into and out of Vermont markets; the services that utilities may offer; the investments in, and construction of, large energy generation plants and transmission facilities; the degree to which utilities can incur long-term indebtedness or issue securities; and, perhaps most importantly, the

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http://blogs.burlingtonfreepress.com/joel/files/2010/10/Joint-wind-support-statement.pdf (last visited July 15, 2012) (supporting commercial wind power development in Vermont and noting local impacts of global events in the national and international energy arena upon Vermont).

43. VT. STAT. ANN. tit. 30, § 3(a) (2010).

44. *Id.*

45. *Id.* § 3(b).

46. *Id.* § 3(d).

47. UNIV. OF VT., VERMONT STATE GOVERNMENT SINCE 1965 554 (Michael Sherman ed., 1999) [hereinafter STATE GOVERNMENT]. At the time of this writing, excluding the Lowell Mountain project recently approved by the PSB and which will be discussed in detail infra, the PSB had fairly recently approved three wind power facility petitions, and rejected one. *See* Draft CEP, *supra* note 31, at III-53; Joint Petition of Green Mountain Power Corporation, et al., for a Certificate of Public Good, Docket No. 7628 (Vt. Pub. Serv. Bd. May 31, 2011) [hereinafter Lowell, http://psb.vermont.gov/sites/psb/files/orders/2011/7628FinalOrder%20CPG%20Attachment%20A-2.pdf.

48. VT. STAT. ANN. tit. 30, § 9 (2010).

49. *Id.* § 12.

50. *In re Amended Petition* of UPC Vermont Wind, LLC for a Certificate of Public Good, Pursuant to VT. STAT. ANN. tit. 30, § 248, et al. (Ridge Protectors, Inc., Appellant), 2009 VT 19, ¶ 2, 185 Vt. 296, 299, 969 A.2d 144, 147 [hereinafter *UPC Vermont Wind*]. Appellants must show clear error to prevail. *Id.*

51. *In re Petition* of Tom Halnon, 174 Vt. 514, 518, 811 A.2d 161, 166 (2002).

conditions under which utilities provide services to their customers, including pricing.[52] In following the section 248 process, however, the PSB is not bound by Act 250 jurisprudence, nor is its environmental impact inquiry limited to the Act 250 evaluation factors.[53] In making this determination, the PSB takes a holistic approach in balancing the potential adverse impacts, environmental and otherwise, against the greater good that would accrue to Vermont and its citizens.[54] Accordingly, unlike the District Commissions that apply Act 250 to proposed developments—which will not grant permits if the environmental impact is undue or unreasonable—[55]the PSB may determine that the public good is met by an energy development project that may have adverse environmental impact. Further, even if the development of certain land was previously considered under the Act 250 process, a later proposal to build an energy generation project on that same land is only evaluated by the PSB under the section 248 process.[56]

In hearings before the PSB on petitions for certificates of public good for new energy generation facilities and transmission lines, both the Agency of Natural Resources (ANR) and the Department of Public Service (DPS) are automatically included as interested parties and provide testimony on proposed projects. The ANR has three departments, each of which plays a role in the section 248 process, either directly or indirectly: Environmental Conservation; Forest, Parks and Recreation; and Fish and Wildlife.[57] The Environmental Conservation Department is responsible for reviewing applications for various permits, such as for storm water runoff.[58] The Forest, Parks and Recreation Department manages state-owned lands under ANR jurisdiction, which include publically-owned mountains and

52. STATE GOVERNMENT, *supra* note 45, at 554.

53. Georgia Mountain, *supra* note 39, at 28.

54. The Vermont Supreme Court has characterized the PSB's evaluation of a petition for a Certificate of Public Good as a "legislative, policy-making process." UPC Vermont Wind, 2009 VT 19, ¶ 2, 185 Vt. at 299, 969 A.2d at 147 (*quoting In re* Vt. Elec. Power Co., 2006 VT 69, ¶ 6, 179 Vt. 370, 376, 895 A.2d 226, 230).

55. *See generally In re* McShinsky, 153 Vt. 586, 572 A.2d 916 (1990) (affirming PSB's denial of permit because of its undue adverse environmental impact); ARGENTINE, *supra* note 27, at 5–7, 57–211.

56. Woodchip Power Plant Appeal (Act 250 Jurisdictional Opinion #2-234) 2–3, Docket No. 91-4-06 (Vt. Envtl. Ct., Jan. 30, 2006).

57. STATE GOVERNMENT, *supra* note 45, at 490–508.

58. *Id.* at 493–94.

ridgelines.[59] The Fish and Wildlife Department is responsible for wildlife and wildlife habitat conservation and providing fish- and wildlife-based recreation opportunities to the public.[60] The main purpose of DPS is to obtain for Vermont consumers "proper utility service at a minimum cost under efficient and economical management consistent with other public policy of the state."[61] As the public's advocate, DPS addresses, among other issues, cost and power grid reliability in its testimony before the PSB.[62]

Electricity generating plants and transmission facilities can begin neither site preparation nor construction in Vermont until the PSB has issued a certificate of public good.[63] The PSB assesses each petition for a certificate of public good under ten broad criteria, nine of which are potentially applicable to wind power projects.[64] First, the proposed project may not "unduly interfere with the orderly development of a region."[65] Second, the capacity generated by the project must be necessary to meet future demand, for which conservation measures would not be a cost-effective means for making up the shortfall.[66] Third, the project must not

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59. *See, e.g.*, VT. DEP'T OF FORESTS, PARKS AND RECREATION, VERMONT TRAILS AND GREENWAYS PLAN 59 (2005), *available at* http://www.vtfpr.org/recgrant/documents/TrailsChapterofSCORP.DOC.

60. *About Us*, VERMONT FISH AND WILDLIFE, http://www.vtfishandwildlife.com/about_history.cfm (last visited June 15, 2012).

61. VT. STAT. ANN. tit. 30, § 202(a) (2008). Vermont's general energy policy is "to assure, to the greatest extent practicable, that Vermont can meet its energy service needs in a manner that is adequate, reliable, secure and sustainable; that assures affordability and encourages the state's economic vitality, the efficient use of energy resources and cost effective demand side management; and that is environmentally sound." *Id.* § 202a(1).

62. *Public Advocacy Division*, DPS, http://publicservice.vermont.gov/divisions/public-advocacy.html (last visited June 15, 2012).

63. VT. STAT. ANN. tit. 30, § 248(a)(2)(A), (B) (2008).

64. *Id.* § 248(b)(1). Although affirmative municipality votes are not required for certification unless the proposed project is a municipal or cooperative endeavor, *Id.* § 248(c), "due consideration [is] given to the recommendations of municipal and regional planning commissions . . . legislative bodies, and the land conservation measures contained in the plan of any affected municipality." *Id.* § 248(b)(1). Importantly, federal environmental law may also require obtaining federal permits before any construction is authorized. *See, e.g.*, Letter from Reg. Div., New England Dist. Corps. of Eng'rs., to Mr. David Cowan, V. P. of Envtl. Aff., UPC Wind Mgmt., LLC (July 18, 2008), http://docs.wind-watch.org/ridge-protectors-motion-29jan2009.pdf (providing notification in Attachment 3, intervener's motion to require developer to file an amended application for certificate of public good, that the developer's plan to impact a 0.23 acre area of wetlands and waterways in conjunction with the Sheffield wind farm was authorized and granted a federal permit).

65. *Id.*

66. Section 248(b)(2). This requirement is waived if "the facility is a SPEED resource and if no part of the facility is financed directly or indirectly, other than power contracts, backed by Vermont electricity ratepayers." *Id.* § 8005(b)(9).

adversely affect the power grid's stability and reliability.[67] Fourth, the project must provide "an economic benefit to the state and its residents."[68] Fifth, it must not have "undue adverse effect[s] on esthetics, historic sites, air and water purity, the natural environment and public health and safety."[69] Sixth, the "purchases, investments, or construction by a company" must be consistent with the resource selection principles set out in the company's approved least-cost integrated plan.[70] Seventh, the project must comply with the DPS' approved electric energy plan, or demonstrate that other good cause exists "to permit the proposed action."[71] Eighth, it must not affect or be located on any part of state waters that have "been designated as outstanding resource waters by the water resource board."[72] Finally, the developer must show that the project "can be served economically by existing or planned transmission facilities without undue adverse effect on Vermont utilities or customers."[73]

B. State Renewable Energy Policy

Vermont has set goals to support the development of renewable energy through providing incentives for "retail energy providers to enter into affordable, long-term, stably priced renewable energy contracts that mitigate market price fluctuation."[74] "Renewable energy" is that energy produced from "a resource that is being consumed at a harvest rate at or below its natural regeneration rate."[75] Vermont has set up the Sustainably Priced Energy Enterprise Development (SPEED) program to help achieve its energy policy goals.[76] Under SPEED, energy projects are divided into two categories: "qualifying" and "non-qualifying" resources.[77] "Qualifying"

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67. *Id.* § 248(b)(3).

68. *Id.* § 248(b)(4).

69. *Id.* § 248(b)(5). The criteria which guide the scope and content of the ANR's testimony include those set out in VT. STAT. ANN. tit. 10, § 1424a(d) & § 6086(a)(1)–(8), (9)(K) (2010).

70. Section 248(b)(6).

71. *Id.* § 248(b)(7).

72. *Id.* § 248(b)(8). Natural gas or electric transmission lines are excluded so long as there is no undue adverse effect on the waters. *Id.*

73. *Id.* § 248(b)(10).

74. VT. STAT. ANN. tit. 30, § 8001 (2008).

75. *Id.* § 8002(2). This includes "flammable gases produced by the decay of sewage treatment plant wastes or landfill wastes and anaerobic digestion of agricultural products, by products, or wastes," but no other forms of solid waste "other than agricultural or silvicultural." *Id.* § 8002(2)(A).

76. *Id.* § 8005(a).

77. *Id.* "Qualifying" or "new renewable energy" resources are those that produce renewable energy that became operational after December 31, 2004, and include additional energy generated by retrofitted or improved renewable energy plants. *Id.* § 8002(4).

or "new renewable energy" resources are defined as renewable energy provided by a resource that became operational after December 31, 2004, or energy generated by retrofitted or improved renewable energy plants.[78] "Non-qualifying" resources are contracts for in-state resources that are fossil-fuel based combined heat and power facilities (CHPs).[79] Vermont's long-range goal is to have SPEED resources, both qualifying and non-qualifying, provide twenty percent of electric retail sales in the state by July 1, 2017.[80] Further, Vermont has set a goal that by 2028, a minimum of sixty megawatts of power "[will be] generated within the state by combined heat and power (CHP) facilities powered by renewable fuels or by non-qualifying SPEED resources."[81] However, by January 1, 2013, mandatory renewable energy portfolios will come into effect unless the goals for renewable electricity generation from qualifying resources have been met.[82] Because of reduced energy use in Vermont since 2005 and sufficient SPEED resources becoming operational, the PSB anticipates that a mandatory Renewable Portfolio Standard (RPS) will not need to become effective in 2012.[83] In its 2011 CEP, however, the DPS set out a long-term goal of meeting 90% of the state's energy needs through renewable resources by 2050.[84] The CEP also recommended "that the legislature consider adopting a streamlined RPS for Vermont, with an aggressive total renewable electricity goal."[85]

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78. *Id.* § 8002(4). These projects include "Cow Power"™ facilities, "which digest cow manure to produce methane gas and use the methane gas to fire 200-600kW generators." 2010 VT. PUB. SERV. BD. BIENNIAL REPORT 10 [hereinafter Biennial Report], *available at* http://psb.vermont.gov/sites/psb/files/publications/Reports%20to%20legislature/SPEED_biennial__report_2009_and_appendix.pdf. The electricity is then purchased by participating customers for an additional four cents per kilowatt hour. *Id.* at 41.

79. VT. STAT. ANN. tit. 30, § 8002(2)(6) (2008).

80. *Id.* § 8005(d)(2).

81. *Id.* § 202(i). CHP facilities are those "that sequentially produce both electric power and thermal energy from a single source of fuel," and "non-qualifying SPEED resources" are contracts for in-state resources that are fossil-fuel based CHPs. *Id.* § 8002(2)(6).

82. *Id.* § 8005(d)(1). Specifically, the amount of qualifying SPEED resources which came online or received a certificate of public good from the Public Service Board between January 1, 2005, and July 1, 2012, must equal or exceed "total statewide growth in electric retail sales" during that time. Further, at least five percent of the total electric retail sales in 2005 must be provided by qualified resources that either came online during this period or received certificates of public good. However, if qualifying SPEED resources equal or exceed ten percent of 2005's electric retail sales, the portfolio requirements will not come into effect. *Id.* § 8005(d)(1).

83. Biennial Report, *supra* note 76, at 9.

84. CEP, *supra* note 31, Vol. I, 3, *available at* http://www.vtenergyplan.vermont.gov/sites/cep/files/2011%20CEP_Volume%201.pdf.

85. *Id.* at 8.

Although the current Vermont administration is officially in favor of commercial wind power,[86] this position is not immediately evident in the 2011 CEP Public Review Draft.[87] As to commercial wind, the CEP can at best be described as descriptive of the uses of wind power and potential problems with its use, without providing any quantified analysis that would lead to resolution of commercial wind power's role in Vermont's energy portfolio.[88] Its recommended solutions to improve the section 248 process with regard to commercial wind power would require significant changes in PSB jurisprudence and procedure; this would appear to offer marginal improvements in certain respects. First, DPS suggests that it should either bolster its in-house aesthetics staff or sustain a long-term contractual relationship with outside aesthetics experts to better assist it in its section 248 role.[89] Because the ANR has aesthetics as one of its statutory areas of review, it is unclear why this should be a DPS function. Further, as review of the aesthetics issues in PSB dockets concerning wind power will show, it is unclear whether more aesthetics input will actually be value-added until aesthetics experts themselves devise a more systematic and quantifiable method of aesthetics assessment. In this regard, it is not clear how the DPS' second recommendation, that it, the ANR, and the PSB "should consider developing generic siting guidelines for developers of wind projects," would accomplish its proposed goal of providing "guidance on aesthetics and other common issues,"[90] in a meaningful way—generic concerns are not the issue, site-specific concerns are. Finally, and perhaps most importantly for purposes of this article, because of the manner in which aesthetic issues are handled in the section 248 process, even a more uniform method of aesthetics assessment does not mean that aesthetics will ordinarily trump societal benefit in the PSB's decision making. Likewise, the second DPS recommendation has little obvious value in terms of the section 248 process, although it may meet certain administrative political requirements: mandatory mediation paid for by the developer at certain

86. Lisa Rathke, *Wind Power Vexing Question for Vermont,* ASSOCIATED PRESS, Sep. 2, 2006, http://www.washingtonpost.com/wp-dyn/content/article/2006/09/02/AR2006090201324.html; AP, *Vermont Governor Decries Approval of Wind Power Project, Conditions Set on Modified Plan by Newton firm*, BOSTON.COM, Aug. 10, 2007, http://articles.boston.com/2007-08-10/news/29228246_1_wind-power-project-turbines-wind-farms. Officially, the current administration supports wind power. Anne Galloway, *Gov. Peter Shumlin Discusses Why He Supports Wind Energy*, VERMONT PUBLIC RADIO (Feb. 18, 2011), http://www.vpr.net/news_detail/90091/.

87. *See* CEP, *supra* note 31, Vol. II, 123 (DPS recommends that Vermont utilities should purchase commercial wind power from sources in other states and Canada).

88. *Id.* at 115–22.

89. *Id.* at 140.

90. *Id.* at 123.

points in the section 248 process.[91] The rationale for this is that it would "provide an avenue for dispute resolution in Section 248 proceedings is used at points where parties are committed to finding solutions, rather than elevating litigation."[92] Given the positions of many committed opponents of commercial wind power in Vermont, the value of such mediation in terms of process improvement would appear to be modest.

The issue for individuals and towns seeking to intervene in the formal section 248 proceedings is not so much the opportunity to be heard as it is finding the money to pay for the independent expert analysis that would be required to provide quantified, substantive pre-filed evidence to the PSB.[93] Review of intervenor submissions in the Lowell Mountain docket reveals sincere (if sometimes seemingly inconsistent) concerns, particularly regarding aesthetics and lifestyle value issues,[94] but little of the substantive evidence that matters most before the PSB. What might prove more useful in meeting this concern is a mandatory fee to be paid by the developer at the time it proposes a project, which would be used to support intervenors in obtaining expert testimony, as New York's new energy generation facility siting law provides for.[95]

DPS also recommends that the ANR continue with its natural resource inventory and mapping project, and that it consider rescinding its moratorium on building wind facilities on state land.[96] The ANR is responsible for the use of state lands, and its policy since 2004 is to ban

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91. *Id.* at 124.

92. *Id.* at 148.

93. *See* Pre-Filed Testimony of Deborah Willey on Behalf of the Lowell Mountains Group at 2, Docket No. 7628 (Vt. Pub. Serv. Bd. Oct. 22, 2010), http://usmfiles.s3.amazonaws.com/phpskppQyl/Willey_testimony.pdf ("Once the turbines are sited, we will have little recourse but to try to endure the ill effects. We believe that studies by a neutral party should be carried out prior to authorizing the GMP project."); Candace Page, *Lowell Mountain Wind-project Opponents Carry on Despite Setbacks*, BURLINGTONFREEPRESS, Jan. 30, 2011, http://www.wind-watch.org/news/2011/01/30/lowell-mountain-wind-project-opponents-carry-on-despite-setbacks/ (explaining that lack of funds forces private wind power opponents to undertake only incomplete analysis or provide only opinion).

94. *See, e.g,* Prefiled Testimony of Roxanne Bedard on Behalf of the Lowell Mountain Group at 2, Docket No. 7628 (Vt. Pub. Serv. Bd. Oct. 22, 2010), http://www.kingdomcommunitywind.com/permitting/lmg-roxanne-bedard/ (although witness had no "clear, unobstructed ridgeline view of the proposed project" from her property, she was concerned about noise, "possibly the lighting of the turbines," and the turbines' impact on her family's enjoyment of snowmobiling and four-wheeling).

95. *See* Public Service Law, Art. X, § 163(4)(a) (McKinney 2012) (developer deposits $350 per MW of nameplate capacity into intervenor fund upon filing of preliminary scoping statement, up to a total of $200,000).

96. *Id.*

wind power development on lands owned by the state.[97] This policy is based in part upon a working group's findings that much state land is under deed restrictions that would not allow wind power development, and that such development is incompatible with the ANR's stewardship mission.[98] In December 2004, a commission established by the governor to determine whether the section 248 process was appropriate for wind power development made a number of recommendations to improve the process. The recommendations included that the PSB hold two public hearings in the project site region, and provide notice to towns within a ten-mile radius of the proposed project site.[99] Other recommendations were not included, such as expanding the definition of "affected community" to include those towns within a ten-mile radius, rather than just the town hosting the project.[100] The commission explicitly noted that, although there was "not statewide consensus on the development of large wind generation projects in Vermont," its task had been only to assess the section 248 process.[101]

In 2006, the ANR promulgated draft guidelines to review petitions for certificates of public good for wind power projects. These guidelines set out the ANR's "expectations for pre- and post-construction data collection and general guidelines for construction, operation, and maintenance of utility-scale wind facilities."[102] Importantly, these guidelines not only define what constitutes undue adverse impacts with regard to animal mortality and bear habitat, for example, they also provide guidance on steps that can be taken to mitigate these impacts so that they are no longer significant.[103] It does not appear that the ANR finalized these guidelines, but it is currently developing a plan to determine which state areas should be off limits to wind development based on wildlife and wildlife habitat considerations.[104]

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97. AG. OF NAT. RES., WIND ENERGY AND OTHER RENEWABLE ENERGY DEVELOPMENT ON ANR LANDS: AGENCY OF NATURAL RESOURCES (ANR) POLICY 3–4 (2004), *available at* http://www.vtfpr.org/lands/documents/windpower.pdf.

98. CEP Draft, *supra* note 31, at III-52.

99. Vermont Commission on Wind Energy Regulatory Policy, Findings and Recommendations, prepared per Executive Order 04-04, Dec. 15, 2004, at II, http://publicservice.vermont.gov/energy/ee_files/wind/WindCommissionFinalReport-12-15-04.pdf.

100. *Id.* at III.

101. *Id.* at 4–12.

102. VT. AGENCY OF NATURAL RES., DRAFT GUIDELINES FOR THE REVIEW AND EVALUATION OF POTENTIAL NATURAL RESOURCES IMPACTS FROM UTILITY-SCALE WIND ENERGY FACILITIES IN VERMONT 1 (2006) [hereinafter Draft Guidelines], *available at* http://www.anr.state.vt.us/site/html/plan/DraftWindGuidelines.pdf.

103. *Id.* at 25–29.

104. John Dillon, *Administration Wants to Identify Areas Off Limits to Wind Energy*, VERMONT PUBLIC RADIO (Feb. 14–15, 2011), http://www.vpr.net/news_detail/90040/. The plan will not be open to public participation, but will be informational in nature rather than regulatory, using existing maps

Vermont's legislature has been active in the promotion of renewable energy in the state. Under the Vermont Energy Act of 2009, the General Assembly found that "it is reasonable to site wind energy generation facilities on state lands," so long as there were no conflicts with federal or state law or a "specific restriction or covenant contained in a conveyance of an interest in the property to the state or one of its agencies or departments," and that development maximized energy production while minimizing "environmental and aesthetic impacts."[105] The ANR was directed to report back to the legislature on the development of wind energy on state lands, but its response simply stated that the agency had neither received any new information regarding its policy, nor had it received any proposals to build wind power facilities on state land in the last year.[106]

II. MUNICIPAL GOVERNMENT AND POLICY

A. Town Meetings

Although there are a number of small cities in Vermont, the predominant style of local government is the township. For the most part, even though townspeople elect officials to fill certain executive roles,[107] important town decisions are made at annual or special town meetings by a majority vote of the town residents present.[108] Vermont law authorizes towns to use the increasingly popular Australian (written) ballot for the residents to indicate their individual decisions at the town meetings.[109] Town meetings traditionally occur on the first Tuesday in March.[110] Every town resident has a right to be heard at a town meeting, but perhaps fewer than forty percent of the attendees on average comment during the debate and discussion of issues.[111] Non-residents cannot speak at these meetings without authorization, nor can they vote. The modern significance and

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showing the location of significant ecological communities in conjunction with commercial grade wind power maps to determine where wind turbines should not be built. *Id.*

105. VT. STAT. ANN. tit. 3, § 2840(a) (2011).

106. Memorandum to Virginia Lyons, Chair, Sen. Comm. on Natural Res. and Energy, and Tony Klein, Chair, House Comm. on Natural Res. and Energy (Feb. 4, 2010), http://www.leg.state.vt.us/reports/2010ExternalReports/253827.pdf.

107. JOSEPH F. ZIMMERMAN, THE NEW ENGLAND TOWN MEETING: DEMOCRACY IN ACTION, 86–87 (1999).

108. *Id.* at 89.

109. *Id.* at 84. Many decisions continue to be made by voice vote, however. *Id.* at 87.

110. *Id.* at 85.

111. *Id.* at 97.

value of the town meeting has been questioned because of decreasing attendance on average,[112] a perception that the meetings are swayed by special interest groups[113] and the reliance that Vermont residents seem to place on the decisions of their elected land use planning board officials.[114]

Surveys of elected town officials, however, have rated the quality of debate and decision-making at these meetings as generally either excellent or good.[115] Beginning in 1974, when the town of Thetford voted to impeach then-President Nixon, special interest groups across the political spectrum have developed proposals to be voted upon by residents on issues varying from banning abortion to declaring nuclear-free zones.[116] Some writers see the debate and decisions that occur on these issues in a positive light and consistent with traditional notions of American democracy.[117] Regarding attendance, studies of Vermont town meetings suggest that the size of the town and the immediacy of the issue are the two most reliable predictors of how many registered voters actually attend town meetings. Generally speaking, the smaller the town, the greater the percentage of participation among the townspeople.[118] Similarly, attendance is greater when controversial issues are discussed and are likely to have a tangible effect on people's lives or livelihoods.[119] For one writer, these two factors represent the best attributes of true democracy, which works best on a smaller scale when people are responsible for making the decisions that impact them directly, and when it deals with conflict and difficult issues in a pragmatic fashion.[120] Importantly, then, Vermont's practical political and legislative processes mean that the economic decisions that wind energy developers make on system siting and material are likely to be scrutinized by those who feel most affected by the developers' decisions. As will be discussed in greater detail, although town decisions regarding wind power siting are not binding upon the PSB, they do appear to play a role in the equitable assessment of circumstances that the PSB conducts in deciding whether to

112. *Id.* at 93.
113. *Id.* at 97.
114. *Id.* at 99.
115. *Id.* at 100.
116. FRANK BRYAN, REAL DEMOCRACY: THE NEW ENGLAND TOWN MEETING AND HOW IT WORKS, 48–49 (2004).
117. *Id.* at 49.
118. *Id.* at 74–78.
119. *Id.* at 233–34.
120. *Id.* at 252–53, 268–69, 294–95.

issue a certificate of public good so that a developer can begin construction.[121]

B. Town Planning

In terms of documented town policy, the Londonderry Town Plan is an example of a municipal planning document that sets out the town's opposition to commercial wind power in explicit terms. The Plan establishes a Resource Conservation District, the purpose of which is "to protect significant forest and scenic resources . . . and to prevent development on ridgelines . . . ."[122] Within the District, "energy generation facilities of any size, are prohibited," as well as on any other land "characterized by one or more fragile natural features" such as ridgelines.[123] Londonderry recognizes its undeveloped mountain vistas as a critically important resource, and specifies Glebe Mountain as a prominent hillside that generates tourism revenue.[124] In the section dealing with Scenic Areas, the Plan notes that "[t]he Glebe Mountain ridgeline . . . is not only the town's paramount scenic resource but also has regional significance," and that "development on the ridgeline would irrevocably alter a highly visible, highly valued and highly visited landscape."[125] Finally, the Plan notes that commercial wind power is particularly unsuitable for the town because of its possible negative impacts on the environment and the economy.[126]

The Town of Londonderry expressed its intent to protect Glebe Mountain in 2006, when residents voted against a proposed wind power project on the mountain at a town meeting.[127] Shortly thereafter, the town filed a detailed recommendation with the PSB against the project before the

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121. *See, e.g.*, *In Sheffield – Enough Talking, It Was Time to Vote on Wind Power*, THE BARTON CHRONICLE, Dec. 7, 2005, *available at* http://www.bartonchronicle.com/index.php/wind-power-sheffield/in-sheffield-enough-talking-it-was-time-to-vote-on-wind-power.html; *see also* Christina Kumka, *Wind farm developer: 'We can't touch Yankee's rates*,' RUTLAND HERALD, Feb. 21, 2010, http://www.croh.info/index.php?option=com_content&view=article&id=224:christina-kumka-rutland-vermont-herald&catid=10:news (citing developer's assessment that public support is important in PSB process).

122. LONDONDERRY TOWN PLAN (2005) 12, *available at* http://www.londonderryvt.org/texts/TownPlanApproved.pdf.

123. *Id.* at 13. Perhaps because they are not considered commercial, wind turbines with less than a 5kW capacity may be installed. *Id.* at 18.

124. *Id.* at 17.

125. *Id.* at 24. Development is specifically prohibited on Glebe Mountain above 2,000 feet. *Id.* at 25.

126. *Id.* at 41.

127 FRIENDS OF GLEBE MOUNTAIN, http://www.friendsofglebemountain.org (last visited June 17, 2012).

developer had even submitted a petition for a certificate of public good, and residents in the area committed to raising $100,000 to fund legal challenges against the project.[128] The developer withdrew from the project, citing local resistance and regulatory uncertainty.[129] As will be seen in the analysis of PSB wind power dockets, the local and regional plans applicable in those cases are perhaps more accurate indicators of Vermont town plans in general regarding the localized suitability of wind power, in that they do not contain the same degree of specificity regarding the use of commercial wind power.

III. THE SECTION 248 PROCESS

The PSB rules require applicants for new electricity generation projects to submit detailed construction plans to "affected municipal and regional planning commissions, and municipal legislative bodies" 45 days prior to submitting the petition for the certificate of public good to the PSB.[130] If the proposed project is a wind power generation facility, then "affected" organizations are defined as those municipal governments and municipal and regional planning commissions within a ten-mile radius of any turbine.[131] This notice requirement provides these towns and commissions with the opportunity to submit recommendations to the PSB, regardless of whether they are granted "party status" to the proceedings on the petition.[132] At the time the petition is filed, the petitioner must also provide notice to adjoining landowners.[133] The PSB may conduct workshops on proposed projects to allow potentially interested parties to obtain technical information on the proposed project prior to discovery.[134]

At a minimum, a complete petition must include: (1) a U.S. Geological Survey topographic map of the proposed project's location, (2) an annotated

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128. *Id.*

129. Glebe Mountain Wind Energy Project, VT, *Project No Project*, UNITED STATES CHAMBER OF COMMERCE, http://www.projectnoproject.com/2010/12/glebe-mountain-wind-energy-project-vt/ (last visited June. 17, 2012).

130. Vt. Pub. Serv. Bd., Requirements for Petitions to Construct Electric and Gas Facilities § 5.402(A) Pursuant to 30 VT. STAT. ANN. § 248, (2006) [hereinafter PSB Rules], *available at* http://psb.vermont.gov/sites/psb/files/rules/OfficialAdoptedRules/5400_248_Requirements.pdf.

131. *Id.* at § 5.403(B).

132. *Id.* at § 5.402(A)(3).

133. *Id.* at § 5.402(B).

134. *E.g.*, Prehearing Conference Memorandum, Pub. Serv. Bd., Scheduling Order and Notice of Workshop 2–3 (July 14, 2010), http://psb.vermont.gov/sites/psb/files/orders/2010/7628PHCMemoreSchedule_Workshop.pdf.

aerial photograph of the project site, (3) a detailed site plan, (4) pre-filed evidence composed of testimony and exhibits that describe how the proposed project meets all the relevant assessment criteria, and (5) an index.[135] Although the PSB may conduct site visits of the proposed project location, information from the visits does not become evidence unless the PSB specifically enters the information into the evidentiary record, either *sua sponte* or at the request of a party to the proceedings.[136] The PSB holds public hearings on petitions[137] at which members of the public may speak or provide written comments,[138] but members of the public are not allowed to participate in evidentiary hearings unless they have intervened and become formal parties.[139] Parties can submit pre-filed evidence after discovery[140] and call witnesses, who will be subject to cross-examination by other parties and the PSB, to testify at the evidentiary hearing.[141] Parties may file briefs at the conclusion of the evidentiary hearing, before the PSB issues its order.[142]

The DPS, representing the public interest regarding energy matters, and the ANR automatically appear as formal parties in cases.[143] The DPS provides evidence and recommendations on whether the project would

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135. PSB Rules, *supra* note 126, at § 5.402(C)(1).

136. *Id.* § 5.405.

137. *Id.* § 5.406.

138. "Vermont law requires the Board to base its decisions on the evidence presented by the parties during the evidentiary hearings. Even though we cannot rely upon them as evidence, public comments provided a crucial role in offering fresh perspectives and bringing up new issues that the Board should take under consideration. In particular, they assisted us in formulating questions that we were then able to pose to the parties and witnesses during the technical hearings." Georgia Mountain, *supra* note 39, at 8.

139. VT. PUB. SERV. BD., CITIZEN'S GUIDE TO THE VERMONT PUBLIC SERVICE BOARD'S SECTION 248 PROCESS 2–3 [hereinafter Citizens' Guide], *available at* http://psb.vermont.gov/sites/psb/files/publications/Citizens_Guide_to_248.pdf. Per the Vermont PSB regulations, the PSB may permit intervention by parties only upon certain issues. 18-1 VT. CODE R. § 2.209(C) (2011); *see, e.g.*, UPC Vermont Wind, 2009 VT 19, ¶ 5, 185 Vt. at 300–01, 969 A.2d at 148, n.1 (noting that appellant had only been permitted to intervene on issues such as "orderly development of the region, the economic impact of the project, aesthetics and other environmental issues, and impact on outstanding resource waters").

140. Citizens' Guide, *supra* note 135, at 7–8; 18-1 VT. CODE R. §§ 2.213(C), 2.214(B) (2011).

141. *Id.* at 9; 18-1 VT. CODE R. § 2.215 (2011). The PSB Rules incorporate the Vermont Rules of Civil Procedure and the Vermont Rules of Evidence. *Id.* §§ 2.103, 2.216.

142. Citizens' Guide, *supra* note 135, at 9; 18-1 VT. CODE R. § 2.223 (2011).

143. VT. STAT. ANN. tit. 30, § 248(a)(4)(E) (2008); Citizens' Guide, *supra* note 135, at 3. Although it accords them appropriate weight, the PSB is not bound by conclusions of adverse impact made by state agencies. *See, e.g.,* Sheffield, *supra* note 32, at 74–81 (disagreeing with the Department of Historic Preservation's finding of adverse impact on a historic site), nor even more technical assessments such as whether a natural community as rare and irreplaceable. *E.g.*, Georgia Mountain, *supra* note 39, at 68.

"unduly interfere with the orderly development of the region with due consideration having been given to the recommendations of the municipal and regional planning commissions,"[144] and whether it is necessary "to meet the need for present and future demand for service," which could not otherwise be satisfied through energy conservation, efficiency, and load management measures.[145] The DPS also provides testimony as to the impact of the project on the electrical system's stability and reliability,[146] and whether the project will provide "an economic benefit to the state and its residents."[147]

The ANR provides evidence and recommendations on whether proposed projects present "undue adverse effect[s] on esthetics, historic sites, air and water purity, the natural environment and public health and safety."[148] The criteria which guide the scope and content of the ANR's testimony before the PSB include those that the PSB itself must consider under title ten, sections 1424a(d) and 6086(a)(1)–(8), (9)(K) of the Vermont Statutes.[149] Through this process, the very comprehensive environmental impact assessment required by Vermont's Act 250 governing development, in general, is incorporated into the PSB's deliberations.[150] Thus, in its testimony before the PSB, the ANR potentially addresses 14 separate criteria pertinent to "outstanding resource waters."[151] These criteria include, among other things: water quality, wildlife impacts, and scenic or natural uniqueness.[152] Complementing this assessment of water quality, the ANR must also address whether the project would result in adverse impacts such as undue water or air pollution, soil erosion, and unreasonable burdens upon affected municipalities' ability to provide educational services.[153] These additional criteria, in certain cases, add to the 14 quality criteria

144. VT. STAT. ANN. tit. 30, § 248(b)(1) (2008).

145. *Id.* § 248(b)(2).

146. *Id.* § 248(b)(3).

147. *Id.* § 248(b)(4).

148. *Id.* § 248(b)(5).

149. VT. STAT. ANN. tit. 30, § 248(b)(1) (2008) (citing VT. STAT. ANN. tit. 10, § 1424a(d) & § 6086(a)(1)–(8), (9)(K) (2008)).

150. VT. STAT. ANN. tit. 10, §§ 6001–6093. Act 250 is seen by some as depressing economic development, in general, because of the complexities of complying with its requirements. Peter Hirschfeld, *Act 250 Reform Also a Target*, TIMES ARGUS, Jan. 9, 2009, http://www.timesargus.com/article/20090109/NEWS01/901090360/1002/NEWS01.

151. VT. STAT. ANN. tit. 30, § 248(b)(1); tit. 10, § 1424a(d) & § 6086(a)(1)–(8), (9)(K) (2008)).

152. VT. STAT. ANN. tit. 10, § 1424a(d)(1)–(8) (2010). These are the same criteria used by the Water Resources Panel of the Natural Resources Board to determine whether a water qualifies as an Outstanding Resource Water. *Id.* § 1424a(a).

153. *Id.* § 6086(a)(1), (4), (6).

assessments, such as the adverse impact of the project on wildlife habitat or endangered species[154] and "the waters' value in providing or maintaining habitat for threatened or endangered plants and animals."[155]

Some of these 14 outstanding resource water criteria are particularly applicable to wind power project applications. For example, applicants must show that the project "will meet any applicable health and environmental conservation department regulation regarding the reduction of the quality of the ground or surface waters flowing through or upon lands which are not devoted to intensive development and which lands are . . . above 1,500 feet elevation."[156] The ANR's assessment of whether there are undue adverse impacts to the environment relies on precedential Act 250 decisions from the District Commissions and the Environmental Court.[157] Consistent with its Draft Guidelines, the ANR's pre-filed testimony not only determines whether there are undue adverse impacts, but it also sets out the mitigation measures it believes necessary to reduce the impacts to acceptable levels.[158] The ANR provides evidence and recommendations directly to the PSB on particular projects, and the petitioner can appeal the ANR's permitting decisions, related to the same projects, to the PSB for review. For example, an interested party might contest a project's application for a storm water permit from the ANR. Before 2009, if the permit was issued, the contesting party could appeal directly to the Vermont Environmental Court.[159] Now, because of a legislative change, the contesting party now must bring its appeal to the PSB for its decision on review.[160]

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154. *Id.* § 6086(a)(1), (8)(A).

155. *Id.* § 1424a(d)(5).

156. *Id.* § 6086(a)(1)(A); *Id.* § 6086(a)(1)(A)(iii).

157. *E.g.*, Proposed Findings of Vermont Agency of Natural Resources at 22–28, Docket No. 7508 (Vt. Pub. Serv. Bd. Mar. 15, 2010), http://www.windaction.org/documents/26605. The PSB is not limited solely to consideration of the Act 250 criteria in its deliberations of impacts upon the environment.

158. Georgia Mountain, *supra* note 39, at 22.

159. *See, e.g., In re* Sheffield Wind Project (Appeal of Brouha et al.), Docket No. 252-10-08 Vtec (Vt. Environmental Court, Oct. 19, 2009).

160. VT. STAT. ANN. tit. 10, § 8506 (2010). Because of the backlog in the Environmental Court's docket, this change has had a positive effect in terms of both reducing the time required for a developer to begin construction and to increase predictability in the process. Interview with Rep. Tony Klein, Chair, House of Reps. Natural Res. and Energy Comm. (Jun. 14, 2011).

IV. PSB WIND POWER JURISPRUDENCE

A. Public Safety and Health

Of the more significant issues litigated before the PSB in wind power dockets, questions concerning the impact upon public safety and health have tended to be the least controversial, at least in terms of actual evidence produced. Public safety issues in particular are non-controversial because mitigation measures, such as restricting access to wind power facilities and reducing operations during certain times in the winter, are sufficient to largely eliminate possible injuries from ice throw.[161] Concerns as to the possible impacts of annoying shadow flicker[162] or flash[163] from the turbine rotors have not figured prominently in Vermont, although they are more significant in Northern Europe given its higher latitudes and denser population.[164] The most significant health issue arising from wind facilities is sound. Different kinds of sound are generated by turbine operation, but "much of the noise emitted from the turbines is masked by ambient or the background noise of the wind itself."[165] However, reports from at least one wind facility in Maine show that nearby residents are disturbed by noises they characterize as "whooshing," "roaring," "thumping," and "grinding," even inside their homes with the windows closed.[166] Some people may be affected by infrasound, which is defined as sound below the normal range of hearing.[167] The PSB has consistently required that wind facilities meet accepted national and international noise levels applicable to audible sound,

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161. When ice builds up on turbine blades, it can fall to the ground or be thrown off the blades as they warm up and continue to rotate. MANWELL, *supra* note 29, at 505. *See* Georgia Mountain, *supra* note 39, at 29–30 (explaining how restricted access and operational adjustments mitigate danger of ice throw).

162. "Shadow flicker occurs when the moving blades of the wind turbine rotor cast moving shadows that cause a flickering effect, which could annoy people living close to the turbine." MANWELL, *supra* note 29, at 508. *See* Georgia Mountain, *supra* note 39, at 29 (explaining the impacts of the shadow flicker phenomenon).

163. Sunlight can be reflected from gloss-surfaced turbine blades and causes a "flashing" effect. Manwell, *supra* note 29, at 508. Author's notes, Dec. 22, 2010, observation of Dynapower turbine, S. Burlington.

164. MANWELL, *supra* note 29, at 508.

165. *Id.* at 481, 485–87.

166. Andy Stone, *More Complications for Wind Power in Maine: Local Residents React to Excessive and Unexpected Noise,* VT. J. ENVTL. L. (Jan. 29, 2010), http://www.vjel.org/news/NEWS100228.html. The Dynapower turbine in S. Burlington is smaller than those proposed for commercial generating facilities, but standing under it one hears at best a soft swishing sound. Author's notes, Aug. 8, 2011. If the gearing inside the turbine nacelle is not kept serviceable, however, mechanical noises could result.

167. JOHN ETHERINGTON, THE WIND POWER SCAM: AN ECOLOGIST'S EVALUATION 121 (2009).

which are not problematic to measure.[168] However, "because of the wide variation in the levels of individual tolerance for noise, there is no completely satisfactory way to measure the subjective effects of noise, or of the corresponding reactions of annoyance and dissatisfaction."[169]

B. Economic and Societal Benefit

A finding of economic benefit, a component of societal benefit, does not require a specific quantitative conclusion, although it is based largely on quantitative factors, such as additional dollars of tax revenue and estimated numbers of new jobs.[170] The PSB only needs to find that the development will be of some economic benefit.[171] The requirement of only "some" benefit appears to be qualified by the PSB's position that this must include stably priced, long-term sales contracts to be of sufficient value to justify a finding that the facility will promote the general good of the state.[172] The two primary arguments that opponents of wind power facilities have raised in the PSB dockets are the plants' negative impact on property values and tourism.[173] In three of the four dockets studied, wind project opponents were unable to establish any credible empirical basis for decreases in either property values or tourism attributable to wind power generation plants.[174] In *Deerfield*, the PSB even found evidence to the contrary: not only did an

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168. *See* Georgia Mountain, *supra* note 39, at 57 (finding economic benefit in the absence of specific quantitative conclusion); Sheffield, *supra* note 32, at 72–73; Deerfield, *supra* note 39, at 6.

169. MANWELL, *supra* note 29, at 481.

170. Georgia Mountain, *supra* note 39, at 24–25; Sheffield, *supra* note 32, at 31–32; Deerfield, *supra* note 39, at 33, 35–36.

171. Deerfield, *supra* note 39, at 33; UPC Vermont Wind, 2009 VT 19, ¶¶ 8–13, 185 Vt. at 302–304, 969 A.2d at 149–50.

172. Georgia Mountain, *supra* note 39, at 80–83; Sheffield, *supra* note 32, at 36–42. The Vermont Supreme Court has found the PSB to be acting properly within the scope of its duties in conditioning the grant of a certificate of public good upon good faith efforts to secure these sorts of contracts. UPC Vermont Wind, 2009 VT 19, ¶ 9, 185 Vt. at 302, 969 A.2d at 149. Central Vermont Public Service has agreed to buy 2/3rds of the Deerfield project's output for nine years. *CVPS to purchase Deerfield Wind power*, CENTRAL VERMONT PUBLIC SERVICE (Sep. 9, 2010), http://www.cvps.com/aboutus/news/viewStory.aspx?story_id=295.

173. Deerfield, *supra* note 39, at 33. Tourism is a very important aspect of the state's economy, accounting for 12% of all jobs in Vermont in 2007, and resulting in 14.3 million person visits to the state that year. *The Travel and Tourism Industry in Vermont, A Benchmark Study of the Economic Impact of Visitor Expenditures of the Vermont Economy, 2007*, VERMONT DEPARTMENT OF TOURISM AND MARKETING, http://www.uvm.edu/tourismresearch/publications/2007_EPR_Summary.pdf. National Geographic has identified Vermont as the highest ranking tourist destination in the U.S. on the basis of authenticity and stewardship. *133 Places Rated: The List,* NATIONAL GEOGRAPHIC TRAVELER website (Nov.-Dec. 2009), http://traveler.nationalgeographic.com/2009/11/destinations-rated/list-text.

174. Deerfield, *supra* note 39, at 33; Sheffield, *supra* note 32, at 32; Georgia Mountain, *supra* note 39, at 24.

adjoining town "not reduce the appraised value of properties that have views of the Searsburg turbines," no one had ever appealed their assessment on the basis of a reduction in value because of a view of the turbines.[175] The PSB also found that the Searsburg plant "served as a tourist draw."[176] In *East Haven*, the hearing officer's recommendation to the PSB that a certificate be denied on grounds that it would jeopardize the public investment in the natural areas around the proposed project site, because of its shocking and offensive impact on visitors,[177] could be interpreted as finding a negative impact on tourism. The PSB, however, rejected this portion of the hearing officer's recommendation because the likely users of the natural areas, hunters and snowmobilers, were not likely to have their experiences negatively impacted by the wind turbines.[178]

C. Wildlife and Wildlife Habitat

In the four cases above, the most contentious issues regarding wildlife appear to be whether there are undue adverse impacts on birds, bats and bears. Evaluations of studies conducted on bird and bat mortality have shown that, in general, deaths caused by wind power facilities are relatively few.[179] There appears to be a significant amount of uncertainty in the actual mortality rates, however. For example, the most common types of birds killed are songbirds.[180] While songbirds are very common, they also tend to be quite small, meaning that it is easy to overlook carcasses when conducting mortality studies, and for scavengers to dispose of carcasses quickly.[181] Studies do suggest that larger types of birds such as raptors favor mountain ridgelines on the eastern edge of the Appalachian Mountains as migratory pathways,[182] and that in the Eastern U.S. "more birds may be

175. Deerfield, *supra* note 39, at 29.

176. *Id.* at 35.

177. East Haven, *supra* note 39, at 44, 52, 54, 56.

178. *Id.* at 102. This finding by the PSB would appear to be inconsistent with its ordinary interpretation of "average" person.

179. ENVIRONMENTAL IMPACTS OF WIND-ENERGY PROJECTS, COMMITTEE ON ENVIRONMENTAL IMPACTS OF WIND ENERGY PROJECTS, NATIONAL RESEARCH COUNCIL 71–72 (2007) [hereinafter NRC STUDY].

180. *Id.* at 74; AAFTAB JAIN ET AL., ANNUAL REPORT FOR THE MAPLE RIDGE WIND POWER PROJECT 1 (2007), [hereinafter Maple Ridge Study], *available at* http://www.horizonwind.com/projects/whatwevedone/mapleridge/documents/06-25-07_MapleRidgeAnnualReport2006.pdf.

181. NRC Study, *supra* note 175, at 74. Scavenger and searcher efficiency studies conducted at the Maple Ridge wind facility in New York found that "carcass removal rates were modest." Maple Ridge Study, *supra* note 176, at 2.

182. NRC Study, *supra* note 175, at 88.

killed at wind-energy facilities on forested ridge tops than in other regions."[183] Generally, bat fatalities in the Eastern U.S. along forested ridge tops are significantly higher than in the West.[184] The proposed wind facility project on East Mountain in *East Haven* was rejected by the PSB because the developer had not provided sufficient information regarding the proposed project's impact on bird and bat populations.[185] In projects that had sufficient fieldwork conducted to assess potential impacts on birds, the identified bird populations for the most part were fairly stable.[186] Bat populations in Vermont are under significant pressure because of their low reproductive rate and the devastating effects of White-Nose Fungus.[187] The impact of even relatively low bat fatalities on different bat species is uncertain.[188] The PSB has not accepted the ANR recommendations to set specific quantitative mortality thresholds for bats.[189] Instead, it has conditioned certificates on two elements: (1) pre- and post-construction studies to generate data to provide greater certainty in this area and (2) mitigation measures planned on the basis of sufficient fieldwork having been completed.[190]

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183. *Id.* at 75.

184. *Id.* at 95.

185. East Haven, *supra* note 39, at 90, 104. The developers petition noted only that there were no known federal or state-listed endangered or threatened bird species at the proposed site, that it did not appear to be suitable habitat for any listed species, and that there was likely "a small but not ecologically significant risk of habitat disturbance" resulting from the project. Petition of EMDC, LLC, d/b/a East Haven Windfarm, ¶¶ 86–87, at 17, Docket No. 6911 (Vt. Pub. Serv. Bd. Nov. 17, 2003).

186. *See* Deerfield, *supra* note 39, at 79–80; Sheffield, *supra* note 32, at 89–95 (finding population stability after sufficient fieldwork). *But see* Georgia Mountain, *supra* note 39, at 70–72 (failing to make a stability determination because of insufficient fieldwork).

187. Reed Elizabeth Loder, *Breath of Life: Ethical Wind Power And Wildlife*, 10 VT. J. ENVTL. L. 507, 516 (2009).

188. *See* VT. AGENCY OF NATURAL RES., ENDANGERED AND THREATENED SPECIES TAKING GENERAL PERMIT FOR THE TAKING OF NAMED BATS (2011), *available at* http://www.vtfishandwildlife.com/library/Reports_and_Documents/NonGame_and_Natural_Heritage/2011_General_Permit_for_Incidental_Take_of_Bats%20A_and_App_1.pdf (placing little brown bats and Northern long-eared bats on the Vermont Endangered Species list, effective July 15, 2011, due to WNS-caused population decreases; four bats may be taken per annum under certain conditions per general permit).

189. Georgia Mountain, *supra* note 39, at 75; Sheffield, *supra* note 32, at 101; Deerfield, *supra* note 39, at 82–83.

190. Georgia Mountain, *supra* note 39, at 75 (requiring two years of study on bat fatalities); Deerfield, *supra* note 39, 82–83. The PSB appeared to very favorably regard the detailed agreement that the Sheffield developer had entered into with the ANR to conduct bird fatality studies and undertake bat fatality mitigation measures, in part because of the length of time over which initial studies had been conducted and the focused nature of the studies. Sheffield, *supra* note 32, at 93–101.

Black bears are not an endangered species in Vermont,[191] but bear populations and habitat are protected.[192] The PSB must give due consideration to whether the project will destroy or significantly imperil "necessary wildlife habitat."[193] Necessary wildlife habitat is defined as "concentrated habitat which is identifiable and demonstrated as being decisive to the survival of a species of wildlife at any period in its life including breeding and migratory periods."[194] The PSB has described "due consideration" of this criterion as not requiring a finding that the project will in fact have this specific effect, but rather whether the habitat in question is "clearly extremely important."[195] If so, then the next questions are: "whether the impacts can be mitigated, and whether the project could be built on alternative locations under the control of the petitioner."[196] As to mitigation, the ANR guidelines require at least a 4:1 ratio to mitigate the loss of bear habitat,[197] and the *Deerfield* certificate was granted in part on other high quality bear habitat being preserved in this ratio.[198] In *Sheffield*, however, the ratio was significantly greater: 2,700 acres of unfragmented forestland in exchange for the 63 acres cleared during construction.[199] Coupled with indirect mitigation measures, such as continuing studies on the effect of wind turbines on bear behavior and population,[200] bear habitat set-offs have satisfied the PSB that there will be no undue adverse impact to

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191. *Vermont's Bear Hunting Season is Sept. 1—Nov. 17*, VERMONTHUNTINGTODAY.COM, http://vermonthuntingtoday.com/blog/index/php/category/vtfg-news/. ("Vermont's bear population is healthy and estimated at more than 5,500 black bears, according to the Vermont Fish and Wildlife Department. The bear population has increased slowly for the last two decades, and regulated hunting is used to control the population's growth.").

192. *See Black Bear Season*, DEPARTMENT OF FISH AND WILDLIFE, http://vtfishandwildlife.com/wildlife_biggame.cfm (last visited June 15, 2012).

193. Deerfield, *supra* note 39, at 73.

194. VT. STAT. ANN. tit. 10, § 6001(12) (2010). "In Vermont, concentrated areas of bear-scarred beech qualify as necessary wildlife habitat." Sheffield, *supra* note 32, at 87.

195. Deerfield, *supra* note 39, at 75.

196. *Id.*

197. Sheffield, *supra* note 32, at 85.

198. Deerfield, *supra* note 39, at 4, 71–75.

199. Sheffield, *supra* note 32, at 20, 86–87 (highlighting the fact that it was likely the size of the parcel, not its quality, which was substantially lower than that in *Deerfield*, that convinced the ANR to call it an "outstanding" conservation measure). Although the parcel in *Sheffield* was significantly larger than that required by the ANR's guidelines, it is not clear that the parcel contained the same high-quality, high altitude bear habitat as the set-off parcel in Deerfield. *Id.* at 20, 87. The size of the Sheffield parcel likely helped the developer in its negotiations with the ANR, and the PSB recognized it as an "outstanding" conservation measure. *Id.* at 86–87.

200. Deerfield, *supra* note 39, at 78. *But see Id.* at 104–05 (dissenting from the majority's opinion, Commissioner John D. Burke found that the impacts on the bear population were so severe that they could not be mitigated, even by the set-off).

bear populations. With regard to alternative locations, the PSB has been satisfied with a showing by the developer that alternatives were not economically viable in terms of "wind resources, proximity to transmission lines, constructability, and other factors."[201]

D. Aesthetics

Although the ANR draft guidelines generally set out the sort of information petitioners need to gather regarding aesthetics,[202] the ANR need not provide an agency assessment of aesthetics in its pre-filed testimony.[203] Under Vermont law, the legal test to determine whether a project will have an undue adverse effect upon aesthetics is the so-called *Quechee* test.[204] Under this test, the PSB first must determine "whether a project will have an undue adverse effect on the aesthetics or scenic and natural beauty of an area" because it would not be in harmony with its surroundings.[205] If a proposed project fails to meet this first part of the test, then the PSB will find the impact to be unduly adverse if it violates "a clear, written community standard intended to preserve the aesthetics or scenic, natural beauty of the area," if it "offend[s] the sensibilities of the average person," or if "the applicants failed to take generally available mitigating steps that a reasonable person would take to improve the harmony of the proposed project with its surroundings."[206] Case law and Environmental Board jurisprudence only require that one of the criteria be met for the adverse impact to be considered undue under Act 250.[207] Appropriate and practicable mitigation measures may, however, overcome otherwise undue impacts of a proposed project regarding all three criteria.[208] Although case studies have identified a number of common issues, such as aesthetics and

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201. *Id.* at 78. In a related area, however, the PSB has denied a developer's petition to erect a wind turbine because he had failed to take appropriate mitigating steps to locate it so that it was not in such close proximity to an adjoining landowner. *In re Petition of* Tom Halnon, 174 Vt. at 514–516, 811 A.2d at 162–63.

202. Draft Guidelines, *supra* note 99, at 2.

203. Although VT. STAT. ANN. tit. 30, § 248(a)(4)(E) (2008) sets an aesthetics assessment as an ANR duty, as will be discussed *infra*, DPS provided it in the Lowell docket.

204. *In re Petition of* Tom Halnon, 174 Vt. at 515, 811 A.2d at 163.

205. *Id.*

206. *Id.*

207. *Id.*

208. *In re* Eastview at Middlebury, Inc. (Miriam Roemischer, Appellant), 2009 VT 98, ¶¶ 20, 21, 107 Vt. 208, 219–20, 992 A.2d 1014, 1021–22 (2009); *see also In re* McShinsky153 Vt. at 572, 592 A.2d at 920 (implying that mitigation attempts such as setback from adjacent landowners, site location, and design elements of the proposed project may provide sufficient mitigation could be sufficient to prevent an undue adverse impact).

mortality of birds and bats, the studies did not address the particularized issue of ridgeline aesthetics in states where that is protected under state law.[209]

As addressed earlier, the *Quechee* test has three prongs. First, the clear, written community standard must be very specific regarding the designation and preservation of scenic resources.[210] Second, the project may not offend the sensibilities of the "average" person, who is informed as to the benefits of wind power and has no personal interest in whether the project goes forward.[211] Offending sensibilities has been interpreted to mean "shocking and offensive,"[212] but the PSB has noted that, just because a development is out of character with its surroundings, it does not mean that the project will fail the *Quechee* test.[213] Third, a developer must take "generally available mitigating steps" to pass the *Quechee* test.[214] As the PSB noted in *Sheffield*, the developer need only take "the generally available mitigating steps which a reasonable person would take to improve the harmony of the project with its surroundings."[215] For example, "[i]t is not possible to provide screening for a 420-foot wind turbine and consequently mitigate the visibility of the project."[216] There are physical and equitable aspects to mitigating adverse visual impact. Physical measures include burying transmission lines on the ridgeline, minimizing areas to be cleared, using existing access roads, using light-colored turbine components, reclaiming areas that had been cleared for construction, and siting the project near existing transmission lines or a load center.[217] Siting close to a load center

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209. *See, e.g.*, NAT'L WIND COORDINATING COMM., WIND POWER FACILITY SITING CASE STUDIES: COMMUNITY RESPONSES 6 (2005), *available at* http://www.nationalwind.org/assets/publications/NWCC_Siting_Case_Studies_Final.pdf (listing four public concerns associated with wind power development, but not including ridgeline aesthetics).

210. UPC Vermont Wind, 2009 VT 19, ¶ 24, 185 Vt. at 308, 969 A.2d at 153.

211. Sheffield, *supra* note 32, at 68.

212. *Id.*; Georgia Mountain, *supra* note 39, at 54; Deerfield, *supra* note 39, at 62.

213. *See* Sheffield, *supra* note 32, at 68 (positing that when viewing distances are such that the size of the wind turbines is not overwhelming, the PSB believes the average person is neither shocked nor offended). Nor does development being out of character mean that it is so shocking and offensive that it would have an undue adverse impact. UPC Vermont Wind, 2009 VT 19, ¶ 34, 185 Vt. at 311, 969 A.2d at 155 (explaining the Board's finding that just because a project is "out of character" with the surrounding area, does not render it shocking or offensive). *See also* Georgia Mountain, *supra* note 39, at 17 (finding that wind turbine development is consistent with existing uses such as logging).

214. Georgia Mountain, *supra* note 39, at 54.

215. *Id.*

216. Sheffield, *supra* note 32, at 68; The Vermont Supreme Court has affirmed this approach. *See* UPC Vermont Wind, 2009 VT 19, ¶ 28, 185 Vt. at 309, 969 A.2d at 153–54 (confirming the approach taken in Sheffield).

217. MANWELL, *supra* note 29, at 476–79; Georgia Mountain, *supra* note 39, at 13, 15, 55; Sheffield, *supra* note 32, at 68.

carries an additional equitable consideration because the people bearing the adverse visual impact are the same people who derive benefit from the wind turbines.[218]

The balancing of any adverse aesthetic impact against the "overall societal benefits of the project" to determine whether it is undue further distinguishes the section 248 process from the Act 250 process.[219] Moreover, the PSB has noted, "in approving wind generation facilities in particular, we balance the significant societal benefits of wind power against its aesthetic impacts."[220] Such benefits include: diversifying the state's energy portfolio;[221] reducing air pollution generally;[222] reducing CO_2 emissions in particular;[223] creating new jobs and tax revenues;[224] reducing costs to Vermont energy consumers through the use of stably-priced, long-term contracts;[225] stimulating local economies through procurement of materials required to construct the facility;[226] and lease payments to landowners hosting the facility.[227] The PSB also considers the enhanced impact of these economic benefits on economically disadvantaged areas.[228]

E. Public Support

The section 248 process is intended to provide an objective and holistic analysis of whether a project promotes the public good. Just because an affected town is against hosting a particular project does not mean that the PSB will disapprove a petition for a certificate of public good. However, it would be naïve to assume that the PSB is not conscious of the level of public support for a project. The PSB factors the degree to which the affected communities support or disapprove of a project into its section 248 analysis. For example, federal,[229] regional,[230] and town development and

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218. Georgia Mountain, *supra* note 39, at 3.

219. *Id.* at 51, 54.

220. Deerfield, *supra* note 39, at 61.

221. Georgia Mountain, *supra* note 39, at 81.

222. *See id.* at 36, 81 (explaining the concessions made by the Board due to the air quality benefits the final project will yield).

223. *Id.* at 81.

224. *Id.* at 25.

225. *Id.* at 81; Sheffield, *supra* note 32, at 35–36; Deerfield, *supra* note 39, at 42–44. Such contracts have been heavily weighted by the PSB in its economic benefit analysis and overall findings of public good. *Id.*

226. Sheffield, *supra* note 32, at 31.

227. *Id.* at 31.

228. Deerfield, *supra* note 39, at 27.

229. *See id.* at 18, 61–62 (considering federal documents related the Green Mountain National Forest in the PSB's determination).

land use plans are considered by the PSB. In the four cases examined by the PSB, however, the development and land use plans did not play a determinative role. First, the section 248 process only requires that the plans be given "due consideration."[231] Second, the plans evaluated by the PSB were neither specific enough regarding particular landscape features to be protected,[232] nor did they reject the possibility of wind power being developed.[233] Zoning ordinances were specifically deemed inappropriate for setting community standards in this regard, because it is possible to obtain variances, and because zoning ordinances do not apply to energy generation projects under section 248.[234] Third, because regional plans account for different development proposals within a town's decision-making power, the PSB noted that only the plans of towns where the wind turbine facilities are actually located are applicable.[235]

For town opposition to wind power to register in the PSB's assessment, it would likely need to be expressed as explicitly as Londonderry's plan does. This would require majority support within a town for prohibiting commercial wind, likely obtained through the town meeting process. Conversely, the PSB appears to accept the proposition that a town voting in favor of a commercial wind power project demonstrates that the town believes the project is consistent with its orderly development. In the *Deerfield* docket, the PSB found that there would be no interference with orderly development or negative impacts on activities that currently took

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230. *See id.* at 17, 62 (stating that a list of goals and policies are not clear, written community standards).

231. Georgia Mountain, *supra* note 39, at 16. UPC Vermont Wind, 2009 VT 19, ¶ 14, 185 Vt. at 304, 969 A.2d at 150. "Due consideration" means that municipal recommendations and land conservation measures are "advisory rather than controlling." *Id.* at 151 (citing Vt. Elec. Power Co., 2006 VT 69, ¶ 25, 179 Vt. 370, 895 A.2d 226).

232. Georgia Mountain, *supra* note 39, at 17–18, 53; *see id.* at 52 (*quoting In re* Halnon Order at 22 n.5, CPG NM-25 (Vt. Pub. Serv. Bd. Mar. 15, 2001), http://www.state.vt.us/psb/orders/2001/files/cpgnm25_final_order.pdf) ("In order for a provision to be considered a clear, written community standard, it must be 'intended to preserve the aesthetics or scenic beauty of the area' where the proposed project is located and must apply to specific resources in the proposed project area."); *see also id.* at 17 (noting that merely citing a scenic resource as a "noteworthy" land feature is insufficient); Deerfield, *supra* note 39, at 62 (stating that a list of goals and policies are not clear, written community standards).

233. Georgia Mountain, *supra* note 39, at 19, 53.

234. *Id.* at 53; UPC Vermont Wind, 2009 VT 19, ¶¶ 11–20, 185 Vt. at 303–07,969 A.2d at 150–52.

235. Sheffield, *supra* note 32, at 27; *see also id.* at 67 (applying the municipal plans of neighboring towns "would undermine the municipal planning process by allowing municipalities to make planning decisions for neighboring towns").

place on the lands surrounding the project, in large part because the two towns hosting the proposed facility were in favor of it.[236]

The determination of whether there is an economic benefit also provides an indirect entry point for the possible consideration of public support. Potentially, the wider the economic benefits are distributed, the greater the support among the citizens of the entire state. Further, the section 248 process does not restrict the PSB to considering only the specific criteria set out in the statute in a narrow, technical fashion. For example, the PSB also considers state energy policy with regard to renewable energy as a factor. In the absence of any comprehensive wind statutes or policies established by the state, the existing framework of renewable energy laws and regulations provides a sense of the goals the citizens of the state support, as implemented by their elected legislators and governor. Finally, the PSB appears receptive to equitable considerations regarding sharing the burden of environmental impacts. In the *Georgia Mountain* docket, for example, the PSB noted favorably that the wind power facility would be located closer to the load center, and therefore the visual impact of the facility would be borne in significant measure by those who used its electricity.[237]

The indirect inclusion of indicia of public support through these limited means is likely necessary to keep the section 248 process objective in its holism. In particular, a consideration of the opposition to commercial wind shows why this is so, especially when the project being considered generates conflict between competing positive environmental values and concerns. The term "NIMBY" is too general a description to be useful in understanding the opposition to wind power projects in Vermont.[238] The

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236. Deerfield, *supra* note 39, at 19–20; Tena Starr, *Windfarms may yet crop up on the Vermont horizon*, VTDIGGER.ORG (Mar. 30, 2010), http://vtdigger.org/2010/03/30/windfarms-on-the-horizon-that-could-have-been-blown-away-may-crop-up/.

237. Georgia Mountain, *supra* note 39, at 3. One writer has made note of balancing all of these concerns in Vermont:

> The time for efficient industrial wind farms is here. Our culture can adapt to restrained aesthetic changes of inland turbines dotting carefully-selected mountain ridgelines. Some public lands are suitable for this kind of shift in vital energy priorities. Every region has a collective ethical responsibility to evaluate its geographic resources and to consider accepting some impacts to contribute to its fair share. These priorities, however, do not justify loosening otherwise important environmental protections and streamlining processes that safeguard environmental values.

Loder, *supra* note 184, at 530–31. Careful selection is precisely the issue.

238. *See* Rathke, *supra* note 86 (noting that Sheffield residents in opposition to wind power project typify a general state concern with preserving scenic vistas).

individuals and groups opposing commercial wind projects often do not do so because they are being selfish; rather, they are reflecting, at the local level, a statewide perspective regarding the aesthetic and environmental value of ridgelines in general.[239] They are not opposed to wind power in general,[240] but some believe that they are being asked to shoulder more than their fair share of energy generation needs.[241] There are also concerns that relatively poor towns find themselves overwhelmed financially, culturally, and legally by out-of-state corporations espousing values very different from their own.[242]

The national and international nature of the energy situation may have an impact on the degree of public support, and complicates the equities that potentially undergird those positions. To increase its portfolio of energy from renewable resources, Green Mountain Power (GMP) and Central Vermont Public Service (a major state utility with which GMP merged)[243] received PSB approval to purchase 55% of the electricity generated by a wind facility in Coos County, New Hampshire.[244] Certain Vermont utilities, including GMP, have recently signed contracts with Hydro-Québec (a Québécois government-owned company) for the purchase of hydropower

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239. Emily Q. Wheeler, Small Town v. Big Wind: Exploring the Complexity of the Wind Power Debate in Rural Vermont 7–9 (Dec. 8, 2006) (unpublished manuscript) (on file with author); *see* Page, *supra* note 90 (explaining the financial issues facing opponents of wind power in Vermont, including the fact that the Sheffield project spent almost one million dollars opposing wind turbine construction but still could not afford the analysis to prove that GMP's plan did not conform to the *Quechee* test).

240. Eli Sherman, *Protestors Target Shumlin During Lowell Mountain Rally*, VTDIGGER.ORG, (Aug. 24, 2011 11:02 PM), http://vtdigger.org/2011/08/24/protesters-target-shumlin-during-lowell-mountain-rally/.

241. Wheeler, *supra* note 231, at 10–11.

242. *Id.* at 20–23. This sense is perhaps reflected in the preemptive filing made by the town of Londonderry in response to the proposed Glebe Mountain project, which described the developer as "a partnership of deep pocketed New York equity investors and a huge Japanese multi-national corporation, supported by attorneys, lobbyists, and public relations firms [which] enjoys many advantages over Londonderry, a small Vermont town." Preliminary Recommendations Filed Pursuant to VT. STAT. ANN. tit. 30, § 248 at 10, Glebe Mountain Wind Development Project (Vt. Pub. Serv. Bd. Mar. 6, 2006), http://www.windaction.org/?module=uploads&func=download&fileId=552. Londonderry is perhaps not quite so mismatched as this filing would suggest; it has Magic Mountain ski area within the town limits, and the average house value was $255,813 in 2009 as compared to $216,300 for the rest of Vermont. *Londonderry, Vermont*, CITY-DATA.COM, http://www.city-data.com/city/Londonderry-Vermont.html (last visited July 15, 2012).

243. *GMP enhances merger value for CVPS customers*, GMPCVPSMERGER.COM (February 15, 2012), http://gmpcvpsmerger.com/newsroom/396gmpenhancesvalue.aspx.

244. *Vermont Regulators Approve 55MW Wind Power Deals*, BRIGHTERENERGY.ORG (May 20, 2010), http://www.brighterenergy.org/10644/news/wind/vermont-regulators-approve-wind-farm-power-deal/.

generated in Canada.[245] Gaz Métro, a Québécois company, owns GMP.[246] In Québec, the new construction of hydro generation facilities to make electricity to sell to the U.S. is controversial because of the creation of new large reservoir and dam systems that will significantly change the environment on and around currently undammed rivers.[247] Although the PSB has shown it is attentive to trans-national equities,[248] an assessment that is too holistic risks becoming paralyzed by its own analysis,[249] and would lead to the consideration of issues outside the scope of the PSB's statutory remit.[250]

V. CASE STUDY: THE LOWELL MOUNTAIN PROJECT

Although the PSB has only rejected one commercial wind power petition, some proposed projects have been abandoned during the certificate of public good process, and some have been abandoned before petitions were even filed. The Lowell Mountain wind station project, approved by the PSB in May 2011, provides a very good example of a developer who

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245. Hydro-Québec also has solicited a number of proposals for the development of wind power in Québec. *See* Sally Blakewell, *Repower to Supply 40 Turbines to EDF Energies Canada Wind Farm*, BLOOMBERG (May 3, 2011), http://www.bloomberg.com/news/2011-05-03/repower-to-supply-40-turbines-to-edf-energies-canada-wind-farm.html (stating "[t]he wind farm was one of the projects chosen after government-owned Hydro-Quebec opened bidding for the installation of 2,000 megawatts of wind energy, according to the statement."); William Marsden, *Hydro power's hidden dirty side*, BOREAL SONGBIRD INITIATIVE (April 15, 2011), http://www.borealbirds.org/news_pages/news_detail.php?a_id=2290.

246. Two of the "Frequently Asked Questions" on the KWC website deal specifically with Gaz Métro's ownership of GMP. *Frequently Asked Questions*, KINGDOM COMMUNITY WIND, http://www.kingdomcommunitywind.com/questions/#canadiancompany (last visited June 16, 2012).

247. Marsden, *supra* note 236.

248. *See* Robin Smith, *Derby Wind: PSB Says Project Must Notify Canadians*, ORLEANSCOUNTYRECORD (March 8, 2012), http://orleanscountyrecord.com/main.asp?SectionID=7&SubSectionID=32&ArticleID=21137 (wind power facility developer must notify Canadian towns within ten mile radius viewshed); Petition of twenty Vermont Utilities, Docket No. 7670, 48 n. 32 (Vt. Pub. Serv. Bd. April 15, 2011) ("the Board's previous orders have made clear that the Board has jurisdiction over environmental impacts of generation projects beyond the state only to the extent that those impacts affect the general good of the state").

249. *See* Sebastian Rietjens & Joseph Soeters, *Measuring the Immeasurable? The Effects-Based Approach in Comprehensive Peace Operations*, 34 INTL. J. PUB. ADMIN. 329, 332–34 (2011) (using holism in assessing a complex system, such as rule of law development, is difficult to quantify and standardize).

250. From an equitable and global environmental point of view, a case could potentially be made that although the Québécois are willing to modify their environment drastically to be able to sell Vermonters the "clean" energy they seem to want, building wind facilities in Vermont might have a lesser overall environmental impact.

appears to have studied the politics of wind power in the PSB process and implemented an outreach program to the community of Lowell to provide information to the residents that was significant in achieving town approval for the project. Further, the developer, a joint venture between Green Mountain Power Corporation, the Vermont Electric Power Company, and Vermont Transco LLC, called Kingdom Community Wind (KCW), appears to have effectively analyzed prior PSB wind power dockets. Additionally, they have worked closely with the ANR to achieve a significant degree of consensus with the agency on several controversial issues both prior to and during the pre-filed testimony process before the PSB. The PSB certificate of public good issued in this docket is still being appealed in part by both the developer and opposing interveners, but analysis of it yields important insights into the application of PSB precedent to wind power issues.

A. Developer Outreach

Kingdom Community Wind, a consortium of GMP, Vermont Electric Cooperative, and Vermont Environmental Research Associates, proposed placing a string of between sixteen to 24 wind turbines along three miles of the ridgeline on Lowell Mountain, in the town of Lowell, Vermont.[251] The proposed location is close to existing power lines and electrical substations, which would reduce the amount of construction necessary to connect the project effectively to the power grid.[252] Although the physical plant of the wind turbine complex would be completely within the borders of Lowell, it would be visible in the viewsheds of the neighboring towns of Albany and Craftsbury.[253] In early 2009, GMP representatives met with the Lowell selectboard and informed the board that GMP was proposing to build the wind power project, but that GMP would not continue planning without local support.[254] The selectboard informed GMP that it would want the Lowell residents to vote on whether to host the project.[255] KCW invested heavily in public relations,[256] hiring a Lowell couple, Mr. and Mrs. Tetreault, to set up an office in their home to provide information to

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251. *About Our Project*, KINGDOM COMMUNITY WIND, http://www.kingdomcommunitywind.com/about-our-project/ (last visited June 16, 2012).

252. *Id.*

253. *Id.*

254. Pre-Filed Testimony of Richard Pion at 2, Docket No. 7628 (Vt. Pub. Serv. Bd. Oct. 21, 2010) [hereinafter Pion Testimony], http://www.kingdomcommunitywind.com/filemanager/download/22641/.

255. *Id.*

256. *Id.* at 2, 4.

residents on behalf of the proposed project.[257] The Tetreaults and KCW representatives also began making presentations to different groups of townspeople on different aspects of the project.[258] As the KCW information campaign proceeded, certain opponents of the project organized into a non-profit entity called the Lowell Mountain Group.[259] Although the Lowell Mountain Group's activities were noted on several websites of other commercial wind project opponents, unlike KCW, it did not establish a comprehensive web site to publicize its positions and archive information.[260]

In its 2009 petition to the PSB to erect meteorological towers to measure wind speeds on Lowell Mountain, KCW included as pre-filed testimony a letter of support from the Lowell selectmen.[261] The Lowell selectboard reviewed arrangements other towns involved in wind power projects had with their respective developers, and then it began negotiating with GMP. In these negotiations, KCW offered financial incentives above the property taxes that would ordinarily be paid on the project as compensation for hosting the project in Lowell. Over the expected useful life of the project these payments to Lowell could total between $13 million and $15 million, and the property taxes themselves would provide approximately 45% of the annual town budget.[262]

KCW conducted an informational meeting in the Lowell school gymnasium in early November 2009 to give residents an opportunity to ask questions and provide their opinions on the project.[263] In December 2009 and early February 2010, KCW followed this with two bus tours to a wind

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257. GREEN MOUNTAIN POWER, KCW - Q&A 11-23 4 *available at* www.kingdomcommunitywind.com/filemanager/download/16775 (last visited June 16, 2012).

258. Interview with Robert Dostis, Vice President GMP (Mar. 23, 2011); KCW - Q&A 11-23, *supra* note 247, at 4.

259. Robin Smith, *Green Light For Lowell Wind Project*, NATIONAL WIND WATCH (June 3, 2011), http://www.wind-watch.org/news/2011/06/03/green-light-for-lowell-wind-project/.

260. *See* KINGDOM COMMUNITY WIND, http://kingdomcommunitywind.com/, (last visited June 16, 2012).

261. Letter from Richard Pion, Alden Warner & Dwight Richardson, Town of Lowell Selectmen, to Trip Wileman, KCW (Jan. 20, 2009), *available at* http://www.kingdomcommunitywind.com/filemanager/filedownload/phprWhEkI/12.%20Lowell%20Letter%20of%20Support.pdf.

262. Pion Testimony, *supra* note 244, at 3–4. The agreement also provided confidence building measures for the town, including a commit to repair town infrastructure damaged during the construction, prior approval of construction plans, a liability insurance policy, a communications protocol, and a decommissioning plan. *Id.* at 4–7.

263. E-mail from Dorothy Schnure, Manager, Corporate Communications, GMP (May 27, 2011, 11:31 AM) [hereinafter Schnure e-mail] (on file with the author); VT. PUB. SERV. BD., NOTICE OF HEARING (Oct. 15, 2009) www.kingdomcommunitywind.com/filemanager/download/16772.

power station in New Hampshire for town residents.[264] The selectboard voted to support the project on February 25, 2010.[265] Prior to the scheduled town meeting day vote, KCW representatives went door-to-door in Lowell distributing information on the proposed project.[266] On town meeting day, March 2, 2010, the measure to approve the project was put to the residents, and they voted seventy-five percent in favor of the project.[267] The meeting was very well attended, and 78% of the townspeople voted.[268] The town selectboard signed the agreement on April 13, 2010.[269] KCW held a barbecue at the Lowell school on June 19, 2010, and provided information on the project to attendees.[270] GMP filed its petition requesting a certificate of public good on May 21, 2010,[271] and after a prehearing conference on July 7, 2010, the PSB set the schedule for the docket, which included a site visit to the project area[272] and two weeks of technical hearings to be held in February 2011.[273] Pursuant to GMP's request, a workshop conducted by PSB personnel was held for the public on July 23, 2010, at which GMP presented the information that it intended to include in its pre-filed testimony and many of its witnesses who would be submitting testimony.[274] On September 23, 2010, the PSB conducted a site visit and held a public hearing at the Lowell school.[275]

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264. *Id.*; John Curran, *Wind power makes headway in Vt.*, BOSTON.COM (March 08, 2010), http://articles.boston.com/2010-03-08/lifestyle/29299907_1_green-mountain-power-windmills-public-service-board.

265. Schnure e-mail, *supra* note 253.

266. *Id.*

267. Pion testimony, *supra* note 244.

268. *Id.*

269. *Id.*

270. Schnure e-mail, *supra* note 253.

271. Joint Petition of Green Mountain Power Corp., Vt. Elec. Coop., Vt. Elec. Power Co., Inc., & Vt. Transco LLC, Docket No. 7628 (Vt. Pub. Serv. Bd. May 21, 2010), http://psb.vermont.gov/sites/psb/files/docket/02__Petition.pdf.

272. Lowell, *supra* note 45, at 7; *see id.* (conducting two additional site visits to view the proposed project from areas that were not able to be incorporated into the initial site visit).

273. Prehearing Conference Memorandum, Scheduling Order and Notice of Workshop at 3, Docket No. 7628 (Vt. Pub. Serv. Bd. July 14, 2010), http://psb.vermont.gov/sites/psb/files/orders/2010/7628PHCMemoreSchedule_Workshop.pdf.

274. Lowell, *supra* note 45, at 6; KINGDOM COMMUNITY WIND, SECTION 248 WORKSHOP (2010), *available at* http://usmfiles.s3.amazonaws.com/phpalgz3R/Kingdom%20Community%20Wind%20-%20PSB%20Workshop%20-%207-23-2010.pdf. "The workshop was designed to provide an opportunity for participants to obtain technical information from the Petitioners in order to better understand the proposed project prior to beginning the discovery phase of the proceeding." Lowell, *supra* note 45, at 6.

275. Schnure e-mail, *supra* note 253.

B. Pre-filed Testimony

Prior to submitting its pre-filed testimony on May 21, 2010, GMP had been working with the ANR on different environmental issues, and had concluded a memorandum of agreement with the ANR on the protocol to be used in assessing bird and bat mortality from the proposed project.[276] However, it had not been able to obtain ANR agreement regarding measures to mitigate the impact on terrestrial wildlife, especially black bears, or on a satisfactory decommissioning plan.[277] The pre-filed testimony of one ANR witness criticized his agency's acceptance of a portion of GMP's study plan for impact on bear habitat,[278] and recommended expanding the study area.[279] This same witness identified habitat fragmentation through the construction of the string of towers along the ridge as perhaps the most significant issue for wildlife.[280] Another ANR witness provided pre-filed testimony that he was unable to assess the impact to the public investment in the state's Wild Branch Wildlife Management Area (WMA).[281] The testimony of a third ANR scientist assessed that the project would have an undue adverse impact through fragmentation and directly upon two important types of uncommon natural communities on Lowell Mountain, unless sufficient mitigation measures were emplaced.[282]

The pre-filed testimony of one DPS witness found that the project would be of economic benefit because of job creation, additional tax revenue, lease payments, and the good neighbor payments GMP had offered to towns bordering Lowell to offset the impacts to their viewsheds.[283]

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276. *See* Transcript of Testimony of John M. Austin at 17, Docket No. 7628 (Vt. Pub. Serv. Bd. Oct. 22, 2010), http://psb.vermont.gov/sites/psb/files/docket/7628LowellWind/Testimony%20&%20Exhibits/Other_Parties'_Prefiled&Exh/ANR&DHP/Austin.pdf (noting that petitioner and department have worked collaboratively on a post-construction monitoring plan).

277. *Id.* at 13, 25.

278. *Id.* at 11.

279. *Id.*

280. *Id.* at 21.

281. Pre-Filed Testimony of John Buck at 3, Docket No. 7628 (Vt. Pub. Serv. Bd. Oct. 22, 2010), http://psb.vermont.gov/sites/psb/files/docket/7628LowellWind/Testimony%20&%20Exhibits/Other_Parties'_Prefiled&Exh/ANR&DHP/Buck.pdf.

282. Testimony of Eric Sorenson at 19, Docket No. 7628 (Vt. Pub. Serv. Bd. Oct. 22, 2010), http://psb.vermont.gov/sites/psb/files/docket/7628LowellWind/Testimony%20&%20Exhibits/Other_Parties'_Prefiled&Exh/ANR&DHP/Sorenson.pdf.

283. Pre-Filed Direct Testimony of John C. Becker at 2, Docket No. 7628 (Vt. Pub. Serv. Bd. Oct. 22, 2010),

Further, even though there might be some decrease in the property values of parcels abutting the project, the possibility of a town- or county-wide decrease in property values was unlikely.[284] Finally, even if there were some decrease in property value with a corresponding decrease in tax revenues, the overall economic benefit would still be greater.[285] The pre-filed testimony of a third witness found that so long as noise from the turbines did not exceed the World Health Organization's standard of 40 dB(A), there would be no adverse impact to the health of those living near the turbines.[286] However, the DPS witness who addressed aesthetics concluded that the adverse impact to aesthetics would be undue, given the potentially large size of the viewshed within ten miles of the project.[287] The witness conducted his own *Quechee* analysis, noting that "each subviewshed is unique in its own terrain characteristics, natural vegetation patterns and built forms" and therefore undue adverse impact varies depending on perspective.[288] On the west side of the mountain, because of its "working" nature, the project was more contextually compatible. The impact of the turbine string on portions of the view from the largely untouched east side, however, would be "offensive," particularly with the nighttime lighting required by the Federal Aviation Administration, unless the lighting was mitigated.[289] Accordingly, a fourth DPS witness concluded that irrespective of the economic benefit, GMP's need for power, and the state's policy of encouraging renewable energy sources, the project was not in the general public good.[290] This finding was made because of the project's undue adverse aesthetic impact and GMP's failure to consider other potentially less costly alternatives to the proposed transmission line upgrade.[291]

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http://psb.vermont.gov/sites/psb/files/docket/7628LowellWind/Testimony%20&%20Exhibits/Other_Parties'_Prefiled&Exh/DPS/Becker.pdf.

284. *Id.* at 6.

285. *Id.* at 10.

286. Pre-Filed Testimony of William Irwin at 2, Docket No. 7628 (Vt. Pub. Serv. Bd. Oct. 22, 2010), http://psb.vermont.gov/sites/psb/files/docket/7628LowellWind/Testimony%20&%20Exhibits/Other_Parties'_Prefiled&Exh/DPS/Irwin.pdf. dB(A) is a filtered measure, in decibels, of sound intensity as the human ear would receive it.

287. Pre-Filed Testimony of Mark Kane at 11, Docket No. 7628 (Vt. Pub. Serv. Bd. Oct. 22, 2010), http://psb.vermont.gov/sites/psb/files/docket/7628LowellWind/Testimony%20&%20Exhibits/Other_Parties'_Prefiled&Exh/DPS/KANE.pdf.

288. *Id.* at 10.

289. *Id.* at 11.

290. *Id.*

291. Pre-Filed Direct Testimony of David Lamont at 2, Docket No. 7628 (Vt. Pub. Serv. Bd. Oct. 22, 2010),

C. Developer Rebuttal

Addressing the concerns raised by the different agencies' pre-filed testimonies and non-agency interveners, GMP submitted extensive rebuttal testimony a month later. GMP proposed that it would conserve 580 acres of nearby land to mitigate the project's adverse effects during the life of the project, and of that amount would conserve 180 acres in perpetuity.[292] GMP also proposed modifications to its construction plan that would reduce the amount of forest that was cut to 151 acres, with a directly disturbed area of 124 acres.[293] GMP's sound expert clarified that there was little health risk associated with sound lower than 45 dB(A), and that although some people were more sensitive to low frequency or infrasound than the average person, there was no evidence of adverse physiological impacts.[294] The majority of GMP's rebuttal testimony took issue with the agency assessments of habitat fragmentation and aesthetics. GMP quantified the amount of wetland that would be directly impacted by the project at half an acre, and proposed to include wetlands in its 580-acre offset, including approximately 17 acres of good quality wetlands.[295] This was over twice the U.S. Army Corps of Engineers' recommended offset ratio of 15:1.[296] GMP contested the ANR's definition of fragmentation, and the degree of adverse effect that a project such as this would have functionally in terms of fragmenting the habitat and impeding animal movement.[297] GMP sharply questioned the empirical basis for DPS's conclusion that there would be an undue adverse aesthetic impact, arguing that the agency witnesses' "conclusions are based on the views from a very small portion of the viewshed."[298] The small number of people who would experience these views tended to do so from the mobile perspective of using certain roads.

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http://psb.vermont.gov/sites/psb/files/docket/7628LowellWind/Testimony%20&%20Exhibits/Other_Parties'_Prefiled&Exh/DPS/Lamont.pdf.

292. Rebuttal Testimony of Robert Dostis at 2, Docket No. 7628 (Vt. Pub. Serv. Bd. Nov. 22, 2010), http://usmfiles.s3.amazonaws.com/phphAE6E5/Dostis%20Rebuttal%2011-22-10.pdf.

293. Rebuttal Testimony of Ian Jewkes at 5, Docket No. 7628 (Vt. Pub. Serv. Bd. Nov. 22, 2010), http://usmfiles.s3.amazonaws.com/phpztityu/Jewkes%20Rebuttal%2011-22-10%20Rev%201.26.11.pdf.

294. Rebuttal Testimony of Robert McCunney at 3, Docket No. 7628 (Vt. Pub. Serv. Bd. Nov. 22, 2010), http://usmfiles.s3.amazonaws.com/php1sRqQ5/McCunney%20Rebuttal%2011-22-10.pdf.

295. Rebuttal Testimony of Jeffrey A. Nelson at 3, 10, Docket No. 7628 (Vt. Pub. Serv. Bd. Nov. 22, 2010), http://usmfiles.s3.amazonaws.com/php3uwbGG/Nelson%20Rebuttal%2011-22-10.pdf.

296. *Id.* at 15.

297. Rebuttal Testimony of Jeffrey A. Wallin at 4, 8, 9, Docket No. 7628 (Vt. Pub. Serv. Bd. Nov. 22, 2010), http://usmfiles.s3.amazonaws.com/phpvEXuVP/Wallin%20Rebuttal%2011-22-10.pdf.

298. Rebuttal Testimony of David Raphael at 2, Docket No. 7628 (Vt. Pub. Serv. Bd. Nov. 22, 2010), http://usmfiles.s3.amazonaws.com/phpy6PpvQ/Raphael%20Rebuttal%2011-22-10.pdf.

There were only three homes within one mile that would have this view on the east side of the mountain, and the mobile users, although they might include cross-country skiers and snowshoers, also included snowmobilers, whose experience of the view was unlikely to be degraded by looking at the turbines.[299]

D. Agency Surrebuttal

The ANR's surrebuttal responses were filed two months later. It was extensive and responded to the GMP rebuttal testimony in detail, explaining why aspects of GMP's proposed land offset to mitigate the impact of the project was insufficient, and citing scientific studies and articles to refute those proffered by GMP. The ANR surrebuttal offers useful insights into agency philosophy and doctrine. For example, regarding the parcel at issue in the public investment discussion, the Wild Branch WMA, the ANR argued that its forest cutting in that area was not fragmentation because, unlike the cutting that would occur for the project, it would grow back quickly as part of the ever-changing forest.[300] According to the definition of fragmentation used by another ANR witness, however, even this gentler cutting would constitute "fragmentation."[301] Further regarding the Wild Branch WMA, an ANR witness noted that only foot traffic was allowed in the area, and moving by foot would take users to vantage points "where the profound human influence of industrial turbine presence will significantly alter the remote outdoor experience."[302] This alteration would begin among users as they were driving to the site, "because everyone approaching the WMA from the north will see and hear the turbines for some distance."[303] Stated plainly, the state's public investment in the WMA apparently

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299. *Id.* at 2–3, 6. Mr. Raphael also contested the agency's assessment of the size of the functional viewshed, as compared to a theoretical viewshed as set out in the agency's testimony. *Id.* at 8–9.

300. Surrebuttal Testimony of John M. Austin at 16, Docket No. 7628 (Vt. Pub. Serv. Bd. Jan. 12, 2011), http://usmfiles.s3.amazonaws.com/phpaDvz8H/Austin%20Surrebuttal%20Testimony%202011%2001%2012%20Final.pdf.

301. Surrebuttal Testimony of Eric Sorenson at 6, Docket No. 7628 (Vt. Pub. Serv. Bd. Jan. 12, 2011), [hereinafter Sorenson Surrebuttal] http://www.vce.org/Sorenson%20Surrebuttal%20Testimony%202011%2001%2012%20Final.pdf.

302. Pre-Filed Surrebuttal Testimony of John Buck at 3, Docket No. 7628 (Vt. Pub. Serv. Bd. Jan. 12, 2010 [sic]), http://usmfiles.s3.amazonaws.com/phpzjOE4f/Buck%20Surrebuttal%20Testimony%202011%2001%2012%20Final.pdf.

303. *Id.*

includes a pristine aesthetic experience for hunters who have driven there to hunt game.[304]

The ANR surrebuttal testimony is also worth reviewing because it shows the developer and the agency awkwardly negotiating through testimonial filings. GMP's rebuttal offered a certain amount of offset acreage. However, the ANR's wildlife expert set out his conditions for finding no undue adverse impact explicitly as well, including permanent conservation easements for adjacent land parcels, permanent easements to conserve high altitude forest and disturbed ridgeline, connectivity easements with large habitat blocks to the south of the project, and restoration of the project site after decommissioning without possibility of future development.[305] These conditions later became the basis for a second agreement between the ANR and GMP,[306] which was concluded on February 23, 2011, and was entered into evidence in the technical hearings the next day.[307]

E. Technical Hearings

If media reports from the technical hearings are an accurate reflection of the general course of the hearings, in view of the extensive pre-filed testimony, there do not appear to have been many surprises in the witnesses' live testimony.[308] Accounts of the hearings suggest they were conducted by the PSB in a very pragmatic, patient, and business-like way, with occasional admonishments to counsel to keep their questioning civil.[309] Observations

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304. *See id.* ("It is a very one dimensional assumption to view hunting and fishing as being only about the harvesting of animals. Remoteness is a quality that plays a very important role in the hunting, fishing, and viewing experience in Vermont.")

305. Sorenson Surrebuttal, *supra* note 292, at 12–13.

306. Lowell, *supra* note 45, at 119–23 (quoting Natural Resource MOU, Exhibit GMP-ANR).

307. *Id.* at 8.

308. *See* Carl Etnier, *Sound the Main Issue at Public Service Board Hearings on Lowell Wind Farm*, VTDIGGER.ORG (Feb. 24, 2011), [hereinafter Carl Etnier] http://vtdigger.org/2011/02/24/sound-the-main-issue-at-public-service-board-hearings-on-lowell-wind-farm/ (noting one noise expert stated wind turbines were excessively noisy); Carl Etnier, *Lowell Mountain: Expert Supports Vermont's Wind Decibel Standard*, VTDIGGER.ORG (Feb. 12, 2011), http://vtdigger.org/2011/02/12/expert-testimony-supports-higher; *see* Paul Lefebvre, *Lowell Wind Hearings Marked by Spirited Exchanges*, VTDIGGER.ORG (Feb. 11, 2011), http://vtdigger.org/2011/02/11/lowell-wind-hearings-marked-by-spirited-exchanges/ (highlighting the basic conflict between the environmental benefits of wind power and asthetic concerns); Carl Etnier, *Aesthetics Metrics Tested in Kingdom Wind Project*, VTDIGGER.ORG (Feb. 10, 2011, 12:53 AM), http://vtdigger.org/2011/02/10/aesthetics-metrics-tested-in-kingdom; John Curran, *Vt. Regulators Weigh Plans For Big Wind Project*, YAHOO! NEWS MALAYSIA, (Feb. 5, 2011), http://my.news.yahoo.com/vt-regulators-weigh-plans-big-wind-project-20110204-134028-911.html.

309. Lowell, *supra* note 45, at 119–23 (quoting Natural Resource MOU, Exhibit GMP-ANR).

of the testimony showed that the PSB was not averse to pointing out logic gaps in witnesses' testimony.[310] Subsequent to the technical hearings, however, the DPS changed its position on the project very dramatically. Consistent with prior PSB dockets on wind power that balanced undue adverse aesthetic impact against overall societal benefit, the DPS revised its assessment to find the adverse aesthetic impact not undue.[311] As it stated in its brief to the PSB following the technical hearings, although it would have undue adverse impact "on a small but significant number of people," the overall societal benefits outweighed the impacts.[312]

F. PSB Findings and Order

In the PSB's summary of the public comments, it noted that several comments "focused on GMP's outreach efforts, and stated that the Lowell citizenry was very well informed, and had open and forthright informational meetings with GMP prior" to the town meeting vote.[313] The PSB noted that other comments "claimed that the residents of Lowell were misled or were ill-informed when they voted on Town Meeting Day."[314] The board also noted the comments it had received concerning the negative impact upon tourism, the environment, natural beauty, and health.[315] The

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310. Carl Etnier Sound, *supra* note 308. During the technical hearings, the sound expert for the Lowell Mountain Group, a private intervener opposed to the project, recommended that the sound level be set at 30 dB(A) to avoid adverse health impacts, and that the sound of the turbine was akin to a "bang" in terms of its disruptive nature. Upon questioning by the PSB the witness conceded that 30 dB(A) was the sound level that one would expect in a library, and that people did not appear to have problems falling asleep there. *Id.*

311. *See* Lowell, *supra* note 45, at 8 (noting that the agreement between GMP and DPS regarding system stability and reliability, and least-cost transmission alternatives, was entered into evidence in the technical hearings on Feb. 23, 2011).

312. Brief of the Vermont Department of Public Service, Docket No. 7628 (Vt. Pub. Serv. Bd. Mar. 21, 2011), http://psb.vermont.gov/sites/psb/files/docket/7628LowellWind/DPS_Brief_7628.pdf.

313. Lowell, *supra* note 45, at 10.

314. *Id.* at 12.

315. *Id.* at 10–12; *see also id.* at 39–40 (noting that despite the significance of tourism to Vermont's economy, there does not appear to have been any empirical assessment done of the project's impact by either agencies or private interveners). Two neighboring towns argued GMP's economic analysis was flawed because it did not account for any impact on tourism but their brief provides only general characterizations of the tourist industry in the area and little empirical data. Proposed Findings of Fact and the Brief of the Towns of Craftsbury and Albany, Vermont at 84–87, Docket No. 7628 (Vt. Pub. Serv. Bd. Mar. 21, 2011), http://psb.vermont.gov/sites/psb/files/docket/7628LowellWind/2011-3-21_ALB-CFT_Brief_7628_.pdf. The towns could only afford a landscape expert to challenge GMP's aesthetic expert on the degree of visibility of the project from surrounding towns; they could not afford analysis to challenge GMP's assessment that the project was in conformance with the Quechee Test or the impact of the project on tourism. Page, *supra* note 89. Opponents of the Sheffield project, however, estimate that they had spent almost $1,000,000 in opposing the project. *See id.* (explaining the financial

PSB approved the issuance of a certificate of public good on the basis of the project being a non-emitting source of renewable energy that would help meet "the need for renewable energy in the region and aid in achieving the standards of the [RGGI],"[316] promote Vermont's goals under SPEED in the development of renewable energy sources, and provide economic benefit "in the form of jobs and tax revenues."[317] Lastly, because the project will be utility-owned rather than investor-owned, "it will provide GMP and VEC with a long-term source of stably priced power."[318] The PSB conditioned its approval on GMP's compliance with the agreement it had entered into with the ANR regarding environmental impact mitigation. Specifically, GMP agreed to "ensur[e] there is a sufficient fund to properly decommission" the facility,[319] and comply "with noise levels consistent with [WHO] and Environmental Protection Agency . . . guidelines" in limiting noise at homes near the facility.[320]

1. Public Health

Sound had been an important issue throughout the proposal and the proceedings, and the PSB recognized that "[n]oise from the proposed project will likely be audible at residences surrounding the proposed project."[321] After receiving extensive testimony on both the nature of the sound generated by the turbines and the appropriate sound level to be met at the nearby residences to ensure no adverse impact upon health, the PSB confirmed the standard used in previous wind power dockets: 45 dB(A) at the outside of homes. The PSB also characterized the turbine sound as a "swish"[322] rather than a "bang" as described by a sound expert for a private intervener.[323] The PSB did find merit in the intervener's concern that the project would essentially use their property between the project and the

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issues facing opponents of wind power in Vermont, the Sheffield project spent almost one million dollars opposing wind turbine construction and still could not afford the analysis to prove that GMP's plan did not conform to the *Queechee Test* and the plan's impact on the town).

316. Findings & Order at 3, Docket No. 7628 (Vt. Pub. Serv. Bd. May 31, 2011), http://glebemountaingroup.org/wp-content/uploads/2010/07/7628-Final-Order1.pdf. The PSB and the Agency of Natural Resources are tasked to create and implement a carbon cap and trade program in order to effectuate Vermont's participation in the Regional Greenhouse Gas Initiative. VT. STAT. ANN. tit. 30, § 255 (2009 & Supp. 2011).

317. Lowell, *supra* note 45, at 10.

318. Findings & Order, *supra* note 310, at 4.

319. *Id.* The PSB characterized this as a matter of "inter-generational equity." *Id.* at 5.

320. *Id.* at 5.

321. *Id.* at 98.

322. *Id.* at 93.

323. Carl Etnier, *supra* note 302.

residences as a noise buffer. It distinguished a Vermont Supreme Court case that had held that the section 248 process was not required to consider individual property rights in determining whether to issue a certificate of public good, finding that in this docket, it was considering "a project that could entirely preclude certain development on neighboring properties for which there would not be the possibility of compensation in a subsequent condemnation proceeding."[324] Accordingly, it conditioned the certificate of public good upon GMP (1) meeting specific noise standards both on the exterior and interior of existing residences, and (2) developing a plan, prior to project operation, to "provide some form of compensation to adjoining landowners who can demonstrate that residential development of their land which otherwise could have occurred, can no longer happen solely because project-related sound levels at new residences on those parcels or subdividable portions thereof would exceed" the specified noise levels.[325]

As to health and public safety, the PSB found no issue regarding ice throw, structure failure, flicker, or construction blasting, so long as certain operating conditions were met.[326]

2. Economic and Societal Benefit

As to the general good of the state, the PSB noted that "[i]n prior cases involving wind generation facilities that were being proposed by non-utility merchant generators, we found the projects would not provide sufficient benefit to the . . . state absent the developers entering into stably priced power purchase agreements with Vermont utilities for a substantial portion of the projects' output."[327] The PSB found that the project would "contribute to diversification of the state's energy portfolio, reduction in global climate change caused by CO2 emissions, and protection of air quality" and "would also result in long-term stably priced power resources for the regulated utility," thereby resulting in "the economic benefits associated with the development of renewable projects, consistent with the state policy goals."[328] In so doing, the PSB rejected the intervener's

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324. Findings & Order, *supra* note 310, at 101 (distinguishing Vt. Elec. Power Co., Inc. v. Bandel, 375 A.2d 975, 978 (Vt. 1977)).

325. *Id.* at 101–02. In a concurring opinion, the PSB Chairman dissented from this portion of the PSB decision on grounds that the PSB had exceeded its statutory authority. *Id.* at 168. He did recommend that GMP consider voluntarily making a plan that would compensate adjoining landowners if noise became an issue in the development of their property. *Id.* at 169.

326. *Id.* at 46–49.

327. *Id.* at 140.

328. *Id.* at 141–42.

arguments that GMP's witness had miscalculated the cost of power from the project, noting that the argument appeared to be based on an incomplete reading of the record evidence, and that the intervener had chosen not to conduct discovery, present its own witness, or cross-examine GMP's witnesses at the hearings.[329] As to economic benefit, the PSB found that "[s]ection 248 only requires a project to have a net economic benefit" and "does not prohibit projects if there are some negative economic impacts, provided those impacts are outweighed by positive impacts so that the net result is economic gain."[330] Specifically, with regard to tourism, the PSB concluded the evidence before it showed "that there will not be a negative impact on tourism" because of the project, and in fact, it might even serve as a tourist draw.[331] GMP also made offers of what it termed "good neighbor payments" to towns adjoining Lowell that would not be hosting the project but would still have the project in their respective viewsheds.[332]

3. Wildlife and Wildlife Habitat

Because the two state-significant natural communities on Lowell Mountain that would be affected by the project were "uncommon" rather than "rare," the PSB was not required to issue a finding of no undue adverse impact upon them.[333] However, the PSB also found that the mitigation and decommissioning measures in the ANR-GMP agreement relating to wildlife habitat and endangered species would mitigate any impact to a level of being only adverse, rather than unduly adverse.[334]

As to wildlife and habitat, the PSB likewise found that the project would "not destroy or significantly imperil necessary wildlife habitat,"[335] although it would "still have an adverse effect on natural communities and the natural environment" despite the measures in the ANR-GMP agreement.[336] The agreement focuses primarily on the main issues identified in the ANR's pre-filed testimony: the loss of bear habitat specifically, and habitat fragmentation generally. In total, under the agreement, 292 adjacent acres would be conserved for bear habitat for twenty-five years after the

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329. Findings & Order, *supra* note 310, at 142–43.
330. *Id.* at 39–40.
331. *Id.* at 40.
332. *Id.* at 13. The Good Neighbor Fund requires a minimum per year payment of $10,000. *Id.* at 23.
333. *Id.* at 115.
334. *Id.*
335. Findings & Order, *supra* note 310, at 116.
336. *Id.* at 117.

completion of decommissioning and 110.3 acres would be subjected to a permanent conservation easement.[337] To mitigate habitat fragmentation, 324 acres of ridgeline would be permanently excluded from development other than for a subsequent renewable energy project, and GMP would be required to obtain, prior to commercial operation, "prudent conservation easements of adequate size and location, as approved by ANR, to be held in perpetuity, to provide wildlife habitat connectivity."[338]

The PSB did not find water and soil pollution to be an issue because GMP had provided evidence that showed it would meet the applicable standards required for permitting.[339] On the related issue of wetlands, the PSB noted that it must give due consideration to the criteria set out in title 10, section 6086(a)(1)(G) of the Vermont Statutes, which requires that proposed developments comply with Vermont's rules on significant wetlands. Accordingly, the PSB conditioned the grant of the certificate of public good upon GMP providing a mitigation plan for the project's adverse impacts to high elevation wetlands, "in particular their headwaters function," as required under the Vermont rules.[340] This plan is in addition to the section 401 certification, the section 404 permit, and wetlands permits that GMP would need prior to construction.[341]

In its findings, the PSB found that GMP had selected Lowell Mountain in part because it had "the low potential for environmental or other impacts."[342]

4. Aesthetics

The PSB also found that the project would "not have an undue adverse impact on the scenic and natural beauty of the area or aesthetics."[343] In the section 248 process, the PSB's use of the *Quechee* test is "significantly informed by the overall societal benefits of the project."[344] The PSB rejected the arguments of private interveners that its consideration of societal benefit in the evaluation of whether there was undue adverse

337. *Id.* at 119–21.
338. *Id.* at 122–23.
339. *Id.* at 55.
340. *Id.* at 68.
341. Findings & Order, *supra* note 310, at 70.
342. *Id.* at 12.
343. *Id.* at 77.
344. *Id.* at 83 (citing and quoting Final Order at 28, Docket 6792 (Vt. Pub. Serv. Bd. July 17, 2003), http://www.state.vt.us//psb/orders/2003/files/6792final.pdf).

impact was impermissible under section 248.[345] Two things are important in the PSB's analysis in this section. The first is the flexible and pragmatic way in which the PSB assessed the affected viewshed.[346] The second is the PSB's implicit recognition that not only do visually mitigating measures such as lowering the height of the turbines begin to significantly degrade the efficiency of the project, but also that adjusting the location of the turbines would cause greater adverse impact on wildlife, thereby nullifying the aesthetic benefit.[347]

5. Public Support

As to the section 248 criteria, the PSB found that there would not be undue interference with the orderly development of the area, given the substantial amount of rural area that would be unaffected by the project, and the lack of prohibition in any regional or municipal plan regarding wind power development.[348]

The PSB found the "project would not unnecessarily or unreasonably endanger the public or quasi-public investment in public facilities," nor would it "materially jeopardize or interfere with the function, efficiency, or safety of, or the public's use or enjoyment of, or access to, the public facility, service, or lands."[349] The PSB found that, although there would be an adverse impact on the trails to some degree, the lengths of impacted trail were small, and in some cases were already experiencing dual use with snowmobiles.[350] As to the Wild Branch WMA, the PSB noted that those using it could still freely access it and use it as they had in the past, "[a]lthough some may perceive their experience to be somewhat less remote in character,"[351] apparently not accepting the ANR's characterization of the essence of the users' experiences.

GMP had proposed to use accumulated depreciation to fund decommissioning, and to meet the terms of the agreement with the ANR,

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345. *Id.* at 89. The PSB likewise rejected an intervener's argument that the § 248 process was unconstitutional because the PSB exercised both administrative and legislative powers, noting that the Vermont Supreme Court had held that the PSB is without authority to address constitutional issues. *Id.* at 155–56.

346. *Id.*

347. Findings & Order, *supra* note 305, at 87.

348. *Id.* at 25. The PSB did not explicitly base its determination on orderly development upon DPS's argument that the project should be seen as consistent with the Lowell town plan because the town voted in favor of the project, but did note it in its findings. *Id.* at 24.

349. *Id.* at 134.

350. *Id.* at 135.

351. *Id.*

which would amount to approximately $5,381,000 over the projected 25-year life span of the project.[352] To ensure that there would be sufficient funds at the time of decommissioning, the PSB directed GMP to file a plan prior to construction that incorporated the requirements of the ANR agreement and provided a detailed cost estimate of decommissioning. As to the fund itself, the projected salvage value of the project could not be deducted from it; to ensure the fund's availability at the time of decommissioning, GMP would be allowed to obtain a letter of credit naming the PSB as the beneficiary and would be required to "demonstrate that the fund will be managed independently and be creditor and bankruptcy remote in the event of GMP's insolvency or business failure."[353] If GMP wished, it could still establish a separate fund in which to place the accumulated depreciation charges, also creditor and bankruptcy remote, which it could use to reduce like amounts on the letter of credit over time.[354]

G. Summary

GMP did a significant amount of field research before deciding to pick Lowell Mountain as the site for a wind power facility, which the PSB noted in terms of GMP's seeking to minimize environmental impact. GMP's early and continuing outreach efforts in Lowell to inform the public of its plans, coupled with its financial offers to the town,[355] appear to have been key in securing the residents' approval to build the project during the course of the annual town meeting. Although the PSB appears to carefully avoid suggesting it would still issue a certificate to a wind power facility for the public good even if a town really did not want to host the facility, town approval may very well be an unspoken equitable factor in the PSB's decision-making process. Explicitly, the value of the town decision in this docket was that it helped quantify the economic benefit of the project in the PSB's assessment of whether societal benefit outweighed any undue adverse environmental impact. Further, GMP's study of past dockets led it to put significant effort into providing very thorough pre-filed testimony, which it had the opportunity to field test at the workshop held in July 2010.

352. *Id.* at 147.

353. Findings & Order, *supra* note 310, at 150.

354. *Id.* at 151.

355. One writer suggests that the way to overcome local resistance is to spread the economic benefit to more than just the actual landowner, that is, to pay those affected in other ways for the loss of something they value, such as aesthetics. Susan Lorde Martin, *Wind Farms and NIMBYs: Generating Conflict, Reducing Litigation*, 20 FORDHAM ENVTL. L. REV. 427, 464–65 (2010).

Although the PSB clearly conducted its own evaluation of GMP's empirical methodologies, the findings it adopted in the docket rarely disputed the information provided by GMP. Finally, while GMP representatives evidenced frustration at times during their negotiations with the ANR, being able to present the PSB with agreements detailing how GMP would meet the agency's concerns regarding wildlife, habitat, habitat fragmentation, and decommissioning appears to have been very significant for the PSB. Accordingly, the Lowell Mountain docket process clarifies for potential developers the scope of the preparatory and testimonial work needed to bring a wind power project to the PSB with a reasonable expectation of success, and provides a more accurate picture of additional costs associated with mitigation measures that would likely be necessary to address environmental concerns.[356]

CONCLUSION

A number of writers have proposed possible solutions to wind power siting issues. Some have suggested that the basic assumption that wind turbines have an adverse impact needs to be revisited. They point out that if the "undue adverse impact" criterion had been applicable earlier, then:

> Every human intrusion on the Vermont landscape that we now revere as emblematic of our rich cultural heritage, from monitor barns to New England connected farmhouses to church steeples to the very cow pastures we regard as quintessentially natural, might never have been allowed under a regulatory regime that precludes projects solely based on 'undue adverse impact' as that phrase has been interpreted in . . . section 248.[357]

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356. Opponents of the Lowell Mountain project appealed the PSB's grant of a Certificate of Public Good to the Vermont Supreme Court, which heard argument on the case on March 28, 2012. Jody M. Prescott, Author's Notes (March 28, 2012) (on file with author). Among other points, Appellants' argued that fairly minor technical issues invalidated the certificate, such as: the PSB lacking the expertise necessary to issue findings on issues of habitat fragmentation, the PSB basing its decision on evidence that the project had to be complete by a certain time to qualify for certain production tax credits, delays were fatal to the grant of the certificate, and the PSB had failed to consider certain data with regard to wind turbine noise modeling. *Id.* Based on the thoroughness of the enquiry in the Lowell Mountain document, and the deference accorded PSB decisions, these arguments will not likely prevail.

357. *See* Sautter & Kreis, *supra* note 38, at 48–49 ("[H]ow fortunate if Vermont could avoid [the subjective decision-making required under the Quechee Analysis] by reaching consensus that wind turbines are not out of character with their surroundings and thus have no adverse aesthetic impact.").

Conceivably, the Vermont General Assembly could legislate this sort of consensus through amending section 248, but the broad impact of such an enactment would essentially vitiate the aesthetics portion of the process, and would not appear to be in keeping with contemporary environmental values of significant numbers of state citizens. Other writers have suggested that one way to harmonize the diverse state and local regulations and requirements in the U.S., such that opposition groups have less impact on siting decisions, is to create an equivalent to the Telecommunications Act of 1996, which "leaves primary siting authority in the hands of local regulators, but places explicit substantive and procedural constraints on the decision-making process."[358] They suggest that "[g]iven 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 facilities siting."[359] They also suggest that "[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."[360] Such an approach, however, would ignore the very significant differences between the environmental impacts of communications towers and lengthy strings of wind turbines on ridgelines, and, even though it could probably be justified under the Commerce Clause, it would represent a major shift in the relationships between the federal government and the states in an area perhaps left more properly to the states under the Tenth Amendment.

There are a number of factors that have influenced the development of commercial wind energy generating facilities in Vermont. The origins of some of these factors lie outside Vermont, such as the recent financial crisis that eliminated the possibility of borrowed capital to continue the Grandpa's Knob project,[361] and whether federal tax credits will continue to be available for wind energy developers.[362] A number of these factors are tied,

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Although it might prove challenging, perhaps viewshed offsets might be a possible way to mitigate adverse viewshed impact, maybe in the form of easements in perpetuity on ridgeline that was assessed as particularly scenic.

358. Patricia E. Salkin & Ashira Pelman Ostrow, *Cooperative Federalism and Wind: A New Framework for Achieving Sustainability*, 37 HOFSTRA L. REV. 1049, 1053 (2009).

359. *Id.* at 1092–93.

360. *Id.* at 1093.

361. Samuel R. Avro, *Lehman Brothers Collapse Hurts Vermont Wind Farm*, CONSUMER ENERGY REPORT (Jan. 8, 2009), http://www.consumerenergyreport.com/2009/01/08/lehman-brothers-collapse -hurts-vermont.

362. *See Promoting Clean, Renewable Energy: Investments in Wind and Solar,* THE WHITE HOUSE, http://www.whitehouse.gov/recovery/innovations/clean-renewable-energy (last visited June 16, 2012) (explaining the significant role played by payment-in-lieu-of-tax-credits, manufacturing tax

directly or indirectly, to the significance of ridgelines under Vermont's strong environmental laws, and the important environmental values that these laws protect. Further, the deliberative mechanisms that effectuate these laws, such as the section 248 process, are impacted both legally and politically by Vermont's system of participatory democracy at the town level. In this context, the fact that the most efficient wind energy systems would need to be built on ridgelines at altitude means that the aesthetic environmental requirements of Vermont law will likely always be implicated. Simply by virtue of topography, these sites may implicate sensitive biomes and species. Further, topography also suggests that these sites will likely be located in towns with low population densities. In keeping with Vermont's patterns of participatory democracy, these towns are more likely to have greater attendance at their town meetings, and the very personal impacts of these power systems on individuals would tend to accentuate that trend. Although town decisions on whether to allow the construction of wind energy power systems are not binding upon the PSB as a matter of law, the degree of local political support is important to wind power developers. In particular, local political support can indicate the degree to which interest groups might seek to intervene in PSB hearings or seek appeal to the Vermont Supreme Court, and weighs favorably on behalf of the developer in PSB considerations of orderly development, economic benefit and societal good.

The section 248 process provides a basic holistic approach through the breadth of the enquiry before the PSB mandated by the statutory criteria. The advocacy roles of the ANR and the DPS, coupled with measures that enhance the transparency of the process, such as the workshops and public meetings provided for under the PSB rules, provide a tremendous amount of information from various perspectives for the PSB to consider in its deliberations. The opportunities for rebuttal and cross-examination expose different perspectives and data to serious critical evaluation, thereby enhancing the quality of the deliberative process. Further, the PSB's application of the different balancing tests that it has developed, such as offsetting adverse aesthetic impact with societal benefit to determine whether the adverse aesthetic impact is undue, provide a weighing of different criteria that help reconcile positive competing environmental interests. As shown by the Lowell Mountain case study, the section 248

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credits, and loan guarantees in boosting renewable energy development); *see also* ETHERINGTON, *supra* note 164, at 83 (explaining the many different subsidies provided to wind power to make it attractive to developers).

process is not an obstacle for developers who study and appreciate its workings and evidentiary rigor. Also, the resolution of the competing approaches to quantifying the intangible criterion of aesthetic impact in the Lowell Mountain docket provides a rational approach to more accurately gauge the actual impact of a project on aesthetics to both opponents and supporters of wind energy projects. Additionally, the section 248 process provides the necessary empiricism to keep the enquiry from being too subjective. Other examples of state energy facility siting processes may encompass many of the same aspects required to be reviewed under the section 248 process. One such example is New Hampshire's Siting Evaluation Committee process,[363] but it does not deal with the review criteria with the same systemic rigor as the section 248 process.[364] Therefore, the section 248 process not only buttresses Vermont's well-deserved reputation for conservation and practical sustainability, it potentially serves as a model for forging the sustainability that the *National Strategic Narrative* seeks to promote to the international community.

363. N.H. REV. STAT. ANN. § 162-H:1–16 (2002 & Supp. 2011); NEW HAMPSHIRE OFFICE OF ENERGY AND PLANNING, NEW HAMPSHIRE'S 10 YEAR STATE ENERGY PROGRAM 4–2 (2002), *available at* http://www.nh.gov/oep/programs/energy/documents/Ch204.pdf.

364. *See* Decision Issuing Certificate of Site and Facility with Conditions at 27–28, Docket No. 2006-01 (State of N.H. Site Evaluation Comm. June 28, 2007), http://www.nhsec.nh.gov/2006-01/documents/062807_decision.pdf (basing its decision on developer's studies, pictures of an existing facility, photo simulations of proposed project, and a site visit).