

STATE OF VERMONT
PUBLIC SERVICE BOARD

Docket No. 6911

Petition of EMDC, LLC, d/b/a East Haven Windfarm,)	
for a certificate of public good, pursuant to 30 V.S.A.)	Hearings at
Section 248, authorizing it to construct and operate a 6)	Montpelier, Vermont
MW wind electric generation facility, and associated)	March 14 – 18,
transmission and interconnection facilities, in East)	March 29 – April 1,
Haven, Vermont)	and April 5 – 8, 2005

Order entered: 7/17/2006

PRESENT: Kurt Janson, Esq., Hearing Officer

APPEARANCES: *See Appendix A*

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I. INTRODUCTION

This Docket concerns a proposed four-turbine, six-megawatt windfarm on East Mountain in East Haven, Vermont. The ultimate question in this proceeding, under Section 248 of Title 30, is whether the proposed project promotes the general good of the state. Answering that question for this project, and for any proposed high-elevation wind generation facility in Vermont, requires a balancing of two fundamental state policies: promoting in-state renewable resources, and protecting Vermont's ridgelines. These two policies are important not only to Vermont's state officials (as shown consistently in legislative and regulatory actions), but also to Vermont's citizens (as reflected in the substantial and strongly-held public opinions that have been submitted in this proceeding).

However, Section 248 requires that the Public Service Board ("Board") determine whether a particular project, with its unique benefits and impacts, promotes the general good of the state. Thus, any decision by the Board is a determination of the merits of a given project, and not a determination of the relative merits of these two policies.

After careful consideration of these policies and the specific facts presented, I recommend that the Public Service Board deny a Certificate of Public Good for the proposed project. The proposed project would be constructed on seventeen acres located in the heart of tens of thousands of acres of undeveloped, conserved lands. While this renewable-energy project would provide undeniable benefits, those benefits would come at a significant cost: the project, with four, 329-foot-tall wind turbines, would be located in the midst of extensive lands that have been protected from development through years of effort and the expenditure of millions of dollars of public funds. In short, I conclude that while this may be the right project,¹ it is in the wrong place.

This recommended decision should not be interpreted as a statement that wind generation cannot be developed in Vermont. Instead, wind and other renewable resources have an important place in Vermont's energy resource portfolio – as recently confirmed in Public Act No. 61 of

1. I use the word "may" advisedly, due to the lack of sufficient evidence on the proposed project's impacts on the natural environment. This evidentiary shortcoming is discussed in Section IIF, below.

2005 – but, I conclude, that place is not on a narrow slice of land surrounded by thousands of acres that have been conserved through unprecedented measures.

There is a second, separate reason that I recommend denial of a Certificate of Public Good in this proceeding. The Petitioner has failed to provide sufficient evidence on the proposed project's impacts on bats and birds. Thus, the record does not support a finding that the proposed Project would not have an undue adverse impact on bats and birds.

I am mindful of the significant benefits that renewable resources such as this proposed project can provide, including fuel diversity, promotion of energy independence, and fewer environmental impacts than conventional generation technologies. Those benefits can, and should, help proponents of renewable resources demonstrate that their projects comply with the Section 248 criteria; those benefits should not, and cannot, justify holding renewable resources to a lower standard of review under the provisions of Section 248. Based on the record before me, for the reasons discussed below, I recommend that the Board find that the Petitioner has failed to demonstrate that its proposed project complies with the environmental protection requirements of Section 248.

Despite its important benefits, commercial-scale wind generation can only be sited in Vermont if the project satisfies the requirements of 30 V.S.A. § 248. Therefore, the ultimate decision in this case, whether the Board adopts, modifies, or rejects my recommendation, must rest on the particular facts presented. I have concluded, and recommended to the Board accordingly, that the facts presented here do not support issuance of a Certificate of Public Good.

A. Procedural History

On November 17, 2003, EMDC, LLC d/b/a East Haven Windfarm ("EMDC"), filed a petition with the Board seeking a certificate of public good ("CPG"), pursuant to 30 V.S.A. §§ 231 and 248, authorizing EMDC to construct and operate a 6 MW wind generation facility, along with associated transmission and interconnection facilities, on East Mountain in East Haven, Vermont (collectively, the "proposed Project"). EMDC also filed testimony and exhibits in support of its petition.

The Board appointed me as Hearing Officer. I convened a prehearing conference on December 11, 2003, to establish a schedule for this Docket, identify potential parties, and explore any preliminary issues.

By Orders entered January 21, January 23, and February 9, 2004, I granted permissive intervention to Vernon and Ellen Gray, Central Vermont Public Service Corporation ("CVPS"), George Willy, the Kingdom Commons Group ("KCG"), the Conservation Law Foundation ("CLF"), Jon H. Day, Brian Kelly, Joan Harlowe, Jody M. Fried, Peter and Elisabeth Foukal, the Nature Conservancy of Vermont ("TNC"), Renewable Energy Vermont, Inc. ("REV"), and Fairwind Vermont ("Fairwind"). An Order issued on June 23, 2004, denied the intervention request of enXco, Inc.

I initially established the schedule for this Docket in a Prehearing Conference Memorandum issued on December 18, 2003. I subsequently modified the schedule a number of times. The most significant of these modifications was an extension to the schedule:

to allow sufficient time for completion of studies relating to the impact of the proposed project [on birds, bats, and other wildlife]. This includes allowing parties to conduct fall migratory studies.²

That extension was in response to motions that had been filed by KCG, TNC, and the Agency of Natural Resources ("ANR"). The extension provided that all parties other than EMDC were to file their direct testimony and exhibits by December 15, 2004, with technical hearings to be held the week of March 14, 2005.

Site visits were held on October 13 and November 4, 2004. The November 4 site visit included a night-time viewing of a simulation of lighting for the proposed Project.

On December 15, 2004, the parties other than EMDC filed prefiled direct testimony and exhibits, except that, as provided in an extension granted on December 13, 2004, ANR filed the prefiled testimony of two witnesses on December 22, 2004.

Also on December 15, 2004, the Department filed a "Procedural Stipulation" between it and EMDC; the other parties to this Docket were not signatories to the stipulation. In the Procedural Stipulation, the Department and EMDC agree that findings under

2. Order of 3/17/04 at 3.

30 V.S.A. §§ 248(b)(3) and (b)(10) regarding the proposed Project would be deferred in the current docket, and made instead in a separate Docket (Docket No. 7067) reviewing the LED transmission upgrade that would allow for interconnection of the proposed Project. On February 3, 2005, I issued a memorandum to the parties concerning the status of the Procedural Stipulation. In the memorandum, I noted that neither the Department nor EMDC had asked that the Board take any action with respect to the Procedural Stipulation, and that no other party had filed any comments on it. The memorandum established a deadline for comments on the stipulation. EMDC and the Department filed comments asking that I approve the Procedural Stipulation, and KCG filed comments opposing it. In an Order dated February 25, 2005, I denied the Department's and EMDC's requests to approve the Procedural Stipulation.

On December 16, 2004, EMDC, filed a motion to amend its petition to delete its request for a CPG under 30 V.S.A. § 231. EMDC included supplemental testimony with its motion. In an Order issued February 3, 2005, I approved the motion, noting that the "approval does not constitute any determination on the issue of whether a Section 231 certificate of public good is required."³

On February 11, 2005, EMDC filed its prefiled rebuttal testimony.

On March 7, 2005, KCG filed a motion for summary judgment. In its Motion, KCG asked that it be granted summary judgment and that EMDC's Petition be denied or, alternatively, that the hearings scheduled to commence on March 14, 2005, be suspended. On March 9, I denied the request to suspend the hearings.⁴ On March 11, 2005, KCG filed a motion to expedite the decision on the summary judgment motion, requesting a fifteen-day deadline for responses to the summary judgment motion. At the first day of hearings, I denied the motion to expedite, and instead allowed thirty days for responses to the summary judgment motion.⁵

On March 14, 2005, EMDC filed the prefiled direct testimony of Allan M. Rice, with an accompanying exhibit. In the filing, EMDC requested that the schedule for the Docket be modified to allow Mr. Rice's testimony and to provide an opportunity for review, responses and

3. Order of 2/3/05 at 2.

4. March 9, 2005, Memorandum from Susan M. Hudson, Clerk of the Board, at 2.

5. Tr. 3/14/05 at 16.

hearings with respect to that testimony. Also on March 14, KCG filed an Objection to Mr. Rice's testimony.

Technical hearings were held on March 14 through 18, March 29 through April 1, and April 5 through 8, 2005, in the Board's hearing room in Montpelier, Vermont.

On May 18, 2005, I issued an Order denying KCG's motion for summary judgment and allowing EMDC to offer Mr. Rice's supplemental testimony and exhibits. The Order afforded all parties the opportunity to conduct discovery and file their own testimony and exhibits in response to EMDC's supplemental evidence. The May 18 Order also asked parties to comment on the possible consolidation of this Docket with Docket No. 7067, which involves the review of the Village of Lyndonville Electric Department ("LED") transmission project designed to allow interconnection of EMDC's wind generation facility.

On July 1, 2005, an Order was issued jointly in this Docket and in Docket No. 7067. In that Order, the Hearing Officers determined that full consolidation of the two proceeding would not be necessary, but that we would hold consolidated hearings on Sections 248(b)(3) and (b)(10).⁶ The July 1 Order established a schedule leading to consolidated hearings in August. The parties subsequently reached an agreement resolving the parties' dispute over the need to hold the consolidated hearings, and as a result the consolidated hearings were canceled with certain testimony and exhibits admitted into evidence by stipulation of the parties.⁷

In an Order issued October 4, 2005, evidence related to the presence of asbestos-containing materials at the project site was admitted by stipulation. That Order also established a briefing schedule for submission of briefs and reply briefs. Pursuant to that briefing schedule, initial briefs were filed by EMDC, the Department, ANR, KCG, CLF, Mr. Day, Mr. Kelley, and CVPS. Reply briefs were filed by EMDC, the Department, ANR, KCG, CLF, Mr. Day, and CVPS.

6. That Order also provided that "at the consolidated technical hearing, all evidence admitted with respect to Sections 248 (b)(3) and (b)(10) will be included in the evidentiary record of both dockets, unless there is a ruling that specifically limits the evidence to only one of the dockets." Order of 7/1/05 at 4–5.

7. See Memorandum from Judith Whitney, Acting Clerk of the Board, 9/30/05.

B. Motion to Admit Additional Evidence Related to Asbestos Issues

On October 27, 2005, Vernon Gray filed a Request to Admit Documents into Record. In his request, Mr. Gray asks that the following two documents, related to the presence of asbestos at the project site, be admitted into the record: a letter dated October 18, 2005, from Vernon Nelson of the Vermont Department of Health to Mathew Rubin of EMDC, and an affidavit of Mathew Rubin, dated October 25, 2005. No party responded to the Grays' request.

Given that the Grays' request is unopposed, I hereby grant it. Therefore, the evidentiary record is reopened for the limited purpose of admitting the two documents identified in Mr. Gray's October 27 filing, and those documents are hereby admitted into evidence.

II. FINDINGS

Pursuant to 30 V.S.A. § 8, and based on the record and evidence before me, I present the following findings of fact and conclusions of law to the Board. To the extent that the findings in this Proposal for Decision are inconsistent with any proposed findings, such proposed findings are denied.

A. The Proposed Project**Findings**

1. EMDC is a Vermont limited liability company based in Montpelier, Vermont. It was formed in 2001 for the purpose of acquiring property on and near East Mountain in East Haven, Vermont, and exploring the development of a wind generation project at that location. Mathew Rubin is president and David Rappaport is vice-president of EMDC. East Haven Windfarm is a registered tradename of EMDC. Rubin pf. at 1.

2. Mr. Rubin is a partner and operator of three hydroelectric generating projects in Vermont and owns Spruce Mountain Design, a company responsible for the rehabilitation of more than a dozen hydroelectric projects in New England. Rubin pf. at 1.

3. EMDC proposes to construct and operate the proposed Project, which would be a commercial wind generation facility in East Haven, Vermont. The proposed Project would consist of the construction and operation of four 1.5 MW turbines on the summit of East

Mountain. Each turbine would have an associated transformer. A 34.5 kV transmission line would be constructed to deliver the energy from the summit to LED's Burke Mountain substation in Burke, Vermont. Rubin pf. at 3.

4. In November, 2001, EMDC purchased property and property rights on East Mountain previously owned by the United States Government, which utilized them for a radar base – the North Concord Air Force Station. The federal government constructed the radar base in 1955 and operated the base until 1961. The base closed in 1962. Rubin pf. at 4–5.

5. The property consists of approximately 17 acres at the summit of East Mountain, approximately 30 acres at a point lower on the mountain two miles from the summit (the "cantonment area"), and an easement to maintain and use Radar Road for ingress, egress, power lines, water and sewer lines, and other reasonable and necessary uses. Radar Road runs 8.2 miles beginning at the end of Mountain Road (East Haven TH-6) up to the summit of East Mountain. Rubin pf. at 4–5; exhs. EHWF-MR-1 and 2.

6. EMDC also holds easements allowing for the use of the so-called Gallup Mills Road, which runs from the Victory Road in Victory to its intersection with Radar Road. Rubin pf. at 4.

7. The abandoned radar base is in generally decrepit condition. There are several large steel buildings on the summit, in various stages of decay. The tallest structure is approximately 64 feet tall. Smaller structures and empty fuel storage tanks are also present. Large areas of the summit are paved with concrete and asphalt. Rubin pf. at 5; exh. EHWF-MR-3.

8. The cantonment area contains a number of decaying Quonset huts, maintenance buildings, and other structures. The proposed Project does not involve any activities at the cantonment area. Rubin pf. at 5.

9. Radar Road is paved for its entire length. The road is in generally good condition, but would need some improvements if the proposed Project is to be constructed. Rubin pf. at 4, 14–15.

10. EMDC proposes to construct the four 1.5 MW turbines on the 17-acre parcel at the summit of East Mountain. The turbines would be spaced approximately 900 feet apart. The nacelle, or hub, of each turbine would be 220 feet above the ground. The nacelle contains the bearings, gearbox, generator and ancillary equipment. Rubin pf. at 8.

11. Each turbine would be mounted on a reinforced concrete foundation, 32 feet by 32 feet. The turbine towers would be conical tubular steel with a pale blue-gray coating. Rubin pf. at 9.

12. Each turbine would have three, 110-foot-long rotor blades. The blades would be made of carbon-fiber-reinforced fiberglass, with a black coating designed to minimize ice on the blades in the winter. The rotor diameter would be 231 feet, and the total height of the turbine would be 329 feet when the top rotor blade is in a vertical position. Rubin pf. at 8–9.

13. Each turbine would be lit twenty-four hours each day, with a single white strobe light during the daytime and a single red strobe light at night. The lights would be contained in a single fixture on top of each turbine's nacelle. Rubin pf. at 13; Boyle/Buscher pf. at 10; exh. EHWF-MR-12.

14. Associated with each turbine would be a 1,750 kVa pad-mounted transformer, located approximately 15 feet from the base of the turbine. The transformer pad would be poured concrete, about 8 feet by 8 feet in size, or would be fiberglass. Each transformer would contain approximately 500 gallons of cooling oil. If a concrete transformer pad is used, the pad would include a concrete berm to provide oil containment and control in the event of a release of the cooling oil. EMDC did not provide details of oil containment provisions if a fiberglass transformer pad were used. Rubin pf. at 9; tr. 3/31/05 at 48 (Rubin).

15. The proposed 34.5 kV transmission line would run between the four transformers, buried beneath the existing summit access road. The transmission line would emerge above-ground near the location where Radar Road starts to descend from the summit, adjacent to the proposed location for turbine #1 as depicted on exhibit EHWF-MR-5. Rubin pf. at 10; exh. EHWF-MR-5.

16. The transmission line would then run above-ground within the Radar Road right-of-way for approximately eight miles, to a point just past the first gate in the road where it would join an existing LED distribution line corridor.⁸ Rubin pf. at 10.

17. Pole heights for the transmission line along Radar Road will average 35 feet above grade, with a 250-foot span between poles. Rubin pf. at 10.

8. Upgrades to the LED line to accommodate and co-locate EMDC's transmission line and associated upgrades at the LED Burke Mountain substation are the subject of Docket No. 7067.

18. The existing meteorological tower would remain at the project site, along with at least one of the existing buildings. That building, which is adjacent to the site for turbine 3, would be used for storage of spare parts, maintenance, and housing a 150-KW back-up emergency generator. The generator would likely be diesel-fired, although EMDC is investigating the use of biodiesel fuel. Telecommunications equipment would be located on the flat roof of the maintenance building. Tr. 3/31/05 at 221–226 (Rubin); Rubin pf. at 10–11.

19. EMDC has not yet determined whether the remainder of the existing buildings at the summit would be demolished in order to construct the proposed Project. That determination would be made, in part, based on whether data indicate that the buildings interfere significantly with wind velocity. Tr. 3/31/05 at 221–226 (Rubin).

20. The foundations of any demolished buildings would remain in place, to maintain an historical record. EMDC has agreed to alter its demolition plans, as consistent with the needs of the proposed Project, if so requested by the Vermont Division for Historic Preservation. Tr. 3/31/05 at 221–226 (Rubin).

21. EMDC initially proposed the creation of an Interpretive Center on the summit to provide a permanent record of the site's history, significance, and association with the Cold War. The Interpretive Center would also have provided information on wind energy and technology, and would have included a viewing platform. Rubin pf. at 12.

22. Because the Interpretive Center was projected to attract large numbers of visitors, EMDC originally proposed to remove most of the buildings at the summit, due to safety concerns. Comen pf. at 32–35; tr. 3/14/05 at 44–45 (Rubin); tr. 3/31/05 at 223–226 (Rubin).

23. Due to concerns of state agencies over the presence of the Interpretive Center at the summit, EMDC revised its plans. It now proposes to install interpretive panels at the summit and at the base camp, instead of constructing the Interpretive Center. EMDC would restrict the number and timing of visits to avoid unreasonable interference with wildlife. In addition, EMDC may develop an off-site permanent exhibit on the Cold War history of East Mountain. Rubin reb. pf. at 4–5.

24. Construction vehicles would access the project site from Gallup Mills Road, which is well-maintained and sufficiently wide in its present condition. At the end of Gallup Mills Road,

construction vehicles would continue to the summit of East Mountain along approximately four miles of Radar Road. Rubin pf. at 14; tr. 3/31/05 at 70 (Rubin).

25. Vehicles could also access the site from Route 114 onto School Street (TH1) in East Haven, then Mountain Road (TH6) to Radar Road (private). Rubin pf. at 14–15.

26. Radar Road is paved and generally in very good condition, although some locations need minor resurfacing work. Rubin pf. at 4. Radar Road has several switchbacks between the cantonment area and the summit. The road may need to be widened at some of the curves to ensure that the largest construction vehicles can negotiate the turns. A maximum of 10,000 square feet of additional road work is expected to be needed. This additional road work may include removing guardrails, soil and ledge, and creating new road bed. Rubin pf. at 14–15.

27. Along many portions of Radar Road and the summit access road, trees and other vegetation have substantially filled in the roadsides over the past forty or more years. In conjunction with the proposed Project, EMDC plans to clear the trees and other vegetation where necessary to re-establish the original right-of-way width of the roads and to allow construction of the new transmission line. This clearing would extend as far as fifteen feet on each side of the roads. Given the approximately seven and one-half miles of road involved, this clearing could encompass up to 28 acres. Rubin pf. at 15; tr. 3/31/05 at 137–138 (Rubin).

28. At the summit of East Mountain, laydown and blade assembly areas would be used to unload and store the turbine blades, towers, and other equipment prior to erection, and to pre-assemble the three rotor blades for each turbine. No excavation would be needed to prepare these areas. While much of the summit is already cleared and paved, or covered by concrete foundations, secondary growth would need to be cleared from between 1.0 and 1.3 acres. Wood cribbing would be placed on the ground as a level surface for the equipment. After completion of construction, the laydown and blade assembly areas would be allowed to revegetate naturally. Rubin pf. at 11, 15; exh. EHWF-MR-10.

29. After completion of construction, no full-time employees would be stationed on-site. Turbine performance and operational instructions would be monitored and controlled remotely via the internet, by the turbine supplier. Part-time staffing, at a level of three full-time equivalents, would visit the site on average a few times per week to maintain the site and

equipment. The part-time employees would also manage the business operations. Rubin pf. at 16.

30. After completion of construction, EMDC would allow public access to the site. The two existing gates on Radar Road would be open for hunters, snowmobilers, cross-country skiers, snowshoers, hikers and mountain bikers. EMDC would install a new automatic gate near the summit to restrict access during times in the winter when conditions present safety concerns. The new gate would remain closed to the public until an access plan has been developed. Rubin pf. at 16.

The Project's Surroundings

31. The project site is located in a very rural, remote part of the state, with few residents and few public roadways. Exh. DPS-1 at 3.

32. The project site is along the generally open ridgeline of East Mountain in the Town of East Haven. Exh. DPS-1 at 3.

33. East Mountain has an elevation of 3,439 feet. It is the highest peak within a series of peaks at the southern edge of the Northeast Kingdom, and is the second-highest peak in the entire Northeast Kingdom. Exh. DPS-1 at 3–4; Jewell pf. at 9.

34. The area within approximately five miles of the project site generally consists of mixed woodlands and undulating terrain. There are a few hamlets on the western edge of East Haven; the surrounding communities, especially those to the north, south and east of the project site, are also rural. Exh. DPS-1 at 3. Within this five-mile radius of the project site, the only significant developments are the existing, abandoned radar base on the 17-acre site atop East Mountain, and the cantonment area (approximately 30 acres). Exh. DPS-1 at 5.

35. Despite the presence of the radar station on East Mountain and logging that has taken place, the landscape around the project site has retained a high degree of intactness, and the overall composition appears natural and untouched. This sense of intactness is enhanced by the remoteness of the landscape. Exh. DPS-1 at 9.

36. Within this area, and surrounding the seventeen-acre project site, are extensive, conserved lands, comprising approximately 132,800 acres, formerly owned by the Champion

Paper Company (the "Champion Lands"). Exh. DPS-1 at 5; Rubin pf. at 4; Decker pf. at 8 – 9; exh. ANR-TD-2; tr. 4/1/05 at 71–72 (Boyle); finding 51, below.

B. 30 V.S.A. § 248(b)(1) – Orderly Development of the Region

Findings

37. The proposed Project will 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, the recommendations of the municipal legislative bodies, and the land conservation measures contained in the plan of any affected municipality. This finding is supported by Findings 38 to 63, below.

38. The proposed Project is located in the Town of East Haven, in Essex County, Vermont, which is in the Northeast Kingdom region of the state. The Town of East Haven does not have a planning commission, zoning regulations, or a town plan. Rubin pf. at 2, 19–20; exh. EHWF-MR-1 and 2.

39. EMDC provided notice of the proposed Project to the East Haven Selectboard, as well as to the Northeastern Vermont Development Association ("NVDA"). Rubin pf. at 19; Ide pf. at 10.

40. The NVDA did not file recommendations with the Board regarding the proposed Project. *See* record, *generally*.

41. The Town of East Haven distributed a survey concerning the proposed Project to residents and non-resident landowners of East Haven, and on September 29, 2003, held an informational meeting on the proposed Project. On October 11, 2003, the East Haven Selectboard voted unanimously "in accepting the survey results of the Town's strong support for this project." The Selectboard filed a letter with the Board which described these events. Rubin pf. at 19–20; exh. EHWF-MR-16.

42. The Town of East Haven is located in Essex county and is covered by and subject to the Regional Plan for the Northeast Kingdom prepared by the NVDA (effective November 3, 2000). Rubin pf. at 20; exh. EWFH-MR-17 and KCG-WJ-20.

43. The region covered by the NVDA Regional Plan consists of Caledonia, Essex and Orleans counties, all within the State of Vermont. This region has an area of 2,207 square miles, which represents twenty-one percent of the entire state. The land on the eastern border rises from the Connecticut River valley up to the forested hills of Essex County. Essex County is sparsely populated and almost completely forested. Exh. EHWF-MR-17 at 4–6.

44. The Regional Plan, in the "Future Land Use" subsection of the land use portion of the plan, divides the region into 5 districts. These districts are identified as (1) Principal Activity Centers, (2) Secondary Activity Centers, (3) Recreational Activity Centers, (4) Village Centers, and (5) Agricultural and Forestry Areas. Exh. EHWF-MR-17 at 31, 35.

45. The Plan states that the purpose of identifying these districts is "to promote the desired pattern of development, minimize the expenditure of public funds, and to concentrate future development in areas where similar activities already occur" Exh. EHWF-MR-17 at 31.

46. The EMDC project on East Mountain is located in the Agricultural and Forestry Area district. The primary activities in the area surrounding the project site are timber harvesting and recreational activities. Exh. EHWF-MR-17 at 28, 34; Rubin pf. at 22; Ide pf. at 7; exh. DPS-1 at 3–6.

47. The Regional Plan provides that the Rural Agricultural and Forestry Areas "should receive very little commercial or industrial development unless it occurs in an established industrial park or in an area specifically designated in the local zoning bylaw." Exh. EHWF-MR-17 at 34. The Town of East Haven does not have zoning. Rubin pf. at 19. The summit of East Mountain is not in an established industrial park. Ide pf. at 7.

48. The Regional Plan also identifies certain basic development considerations. The Plan states that the considerations are "presented in order to ensure a fair and comprehensive review occurs for each development." The Plan further states that the considerations also are presented as a checklist for local officials to consult when reviewing proposed developments. Exh. EHWF-MR-17 at 34.

49. The development⁹ considerations set forth in the Regional Plan include "The Character of the Area Affected" and "Higher Elevation." The considerations under "The Character of the Area Affected" include, among others, the following:

- The proposed project, by its nature, scale, appearance or operation should not significantly alter or adversely change the character of the potentially affected area as it exists or as the area is projected to exist in the municipal land use plan and the zoning by-law in effect.
- The visual impacts of the proposed building size, height, siting and exterior will be designed to be in keeping with the existing uses within the area.

Exh. EHWF-MR-17 at 35.

50. The "Higher Elevation" considerations in the Regional Plan state:

- In accordance with state policy, areas with elevations over 2,500 feet should receive little or no development and logging practices should receive careful review to ensure adequate protection for sensitive areas.

Exh. EHWF-MR-17 at 39.

51. The seventeen-acre project site is surrounded by approximately 132,800 acres of land formerly owned by the Champion Paper Company (the "Champion Lands"). Substantial time and effort, and millions of dollars of public funds, have been expended to preserve the remote and undeveloped nature of the Champion Lands. Approximately two-thirds of the Champion Lands, 84,000 acres, are now owned by the Essex Timber Company, and are subject to a permanent conservation easement and a permanent public access easement. The State of Vermont owns 22,500 acres of the Champion Lands, and the federal government owns the remaining 26,300 acres. Exh. DPS-1 at 5; tr. 4/1/05 at 71–72 (Boyle); Decker pf. at 9–10; exh. KCG-WJ-22 at III-3 to III-5.

52. Easements and management plans for the Essex Timber Company portion of the Champion Lands are designed to preserve the character of the area. The state and federal governments purchased, and have managed, the remaining Champion Lands for purposes of wildlife management, public access and enjoyment of this unique area of Vermont, and to preserve the distinctive character of the area. Decker pf. at 9.

9. "Development" is defined in the Plan "to include the construction of residential, commercial and industrial facilities. . . ." Exh. EHWF-MR-17 at 34.

53. The Essex Timber Company's 84,000 acres are subject to a permanent conservation easement (the "Conservation Easement") and a permanent public access easement (the "Public Access Easement"). The Vermont Land Trust ("VLT") and the Vermont Housing and Conservation Board ("VHCB") are co-holders of the Conservation Easement; ANR and VHCB are co-holders of the Public Access Easement. Decker pf. at 9; exh. KCG-WJ-22 at III-3.

54. The principal objective of the Conservation Easement is to "establish and maintain productive forestry resources on the protected property . . . in a manner that minimizes negative impact and the duration of impact on surface water quality, recreational benefits to the public, wildlife habitat, and other conservation values." The Conservation Easement further seeks, as its secondary objective, to "conserve biological diversity, soil productivity, native flora and fauna, and the environments and ecological processes which support them" Exh. KCG-WJ-21 at 1.

55. The Conservation Easement identifies the "East Mountain Old Growth Area" as an area of ecological significance, describing the area as follows:

One of the best examples of original montane spruce-fir forest in Vermont, which contains spruce trees over 260 years old. This dark, mossy forest on the high, southwest slope of East Mountain is part of a relatively small contiguous area with a wide diversity of ecosystems that is of county-wide significance. The entire upper basin, including the old growth forest, is a Nongame and Natural Heritage Program site of statewide significance.

Within this Old Growth Area, the Conservation easement prohibits forest management activities, operation of mechanized or motorized equipment, physical disturbance or alteration of the surface of the ground, and any activity that would alter the natural water level or flow. Exh. KCG-WJ-21 at 3, 9.

56. The Conservation Easement further provides that

Grantor and Grantee recognize these silvicultural, public recreational, and natural values of the Protected Property, and share the common purpose of conserving these values by Grantor's conveyance of this Grant, to prevent the use or development of the property for any purpose or in any manner which would conflict with the maintenance of these silvicultural, public recreational, and natural resource values. Grantor conveys such Grant in order to conserve these values for present and future generations.

Exh. KCG-WJ-21 at 3.

57. The Conservation Easement establishes specific restrictions on the uses of the property.

The restrictions include the requirement that

The protected property shall be used for forestry, educational, non-commercial recreation, and open space purposes only. No residential, commercial, industrial, or mining activities shall be permitted, and no building, structure, or appurtenant facility or improvement shall be constructed, created, installed, erected or moved onto the Protected Property, except as specifically permitted under this Grant.

Exh. KCG-WJ-21 at 4.

58. The Public Access Easement for that portion of the Champion Lands owned by the Essex Timber Company provides for

perpetual public, recreational access to the Property for traditional recreational purposes, including, fishing, hunting (including training and using hunting dogs), trapping, equestrian, bird-watching, hiking, bicycling, snowmobiling, cross-country skiing, snowshoeing and other recreational uses which may not be traditional, but which may be compatible with the foregoing uses and with the other Purposes of the Easement.

The Public Access Easement further requires its holders to prepare a long-term access plan. Exh. KCG-WJ-23 at 1–2.

59. ANR has issued a Long Term Access Plan for the 84,000 acres of the Champion Lands owned by the Essex Timber Company (which the Access Plan refers to as the "Private Timberlands"). The Access Plan states:

The Private Timberlands portion of the former Champion lands encompasses an undeveloped expanse of forests, mountains, ponds and streams that contribute significantly to the character, economy and recreational opportunities of the region.

...

Because of their rugged, undeveloped, and remote character, they provide special opportunities for recreational activities that benefit from such a setting. The value of the Private Timberlands from a public access perspective is enhanced because they are an integral part of a large, undeveloped forested landscape in northeastern Vermont that includes a total of more than 200,000 acres that are either owned by the public or open to public access through permanent easements.

Decker pf. at 13 – 14; exh. KCG-WJ-22 at I-1.

60. The Long Term Access Plan sets forth the management direction for the entirety of the Champion Lands. The Long Term Access Plan identifies the following as "a single unifying theme for management of the former Champion lands":

Manage the former Champion lands as a rugged, relatively remote and ecologically sustainable landscape, with diverse but complementary forms of land management designed to meet social and economic needs, by providing for production of forest products, habitat for target wildlife species, maintenance of the special recreational opportunities provided by this large undeveloped landscape and primitive recreational setting, and conservation of rare and exemplary natural features at both a large and small scale. This management will require that the mix and relative dominance of uses will vary among the three new ownerships and from one portion of a single property to another.

Exh. KCG-WJ-22 at III-28 to III-29.

61. In the Champion Lands, public access is allowed for recreational activities. The allowed activities include hunting, fishing, hiking, Nordic skiing, snowmobiling, snowshoeing, and equestrian activities. Much of this activity is diffuse in nature, with only sparse human presence.

Exh. DPS-1 at 6; exh. KCG-WJ-23 at 1–2.

62. The efforts to conserve the Champion Lands were a continuation of a broad, long-term strategy of the State of Vermont to protect the remote, rugged landscape in this area, a landscape unlike that found anywhere else in Vermont. The Northeast Kingdom now has over two hundred thousand acres of conserved lands which provide a remote, rugged outdoors experience. The region's mountain peaks are the cornerstone of this remote, undeveloped character. Decker pf. at 3–4, 17–18, 20; exhs. ANR-TD-1 and TD-2.

63. The proposed Project would be fundamentally incompatible with the remote, undeveloped nature of the surrounding conserved Champion Lands. Findings 165, 261 – 263, below.

Discussion

Section 248(b)(1) provides that, before the Board may issue a CPG for an in-state facility, the Board shall find that the facility:

will not 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, the recommendations of the municipal legislative

bodies, and the land conservation measures contained in the plan of any affected municipality.¹⁰

EMDC contends that under Section 248(b)(1), the Board should not take into consideration regional and state planning documents and private easements. EMDC argues that the statute sets forth "*a limited and exclusive* list of sources to consider, not an expansive one."¹¹ EMDC asserts that because the statute does not list regional plans, state planning documents (such as the Long Term Access Plan for the former Champion Lands), and private easements, those sources should not enter into the Board's analysis under Section 248(b)(1).

EMDC also contends that even if the Board were to consider the Regional Plan for the Northeast Kingdom, the land-conservation provisions in that plan are not sufficiently specific to be cognizable under Section 248(b)(1). Finally, EMDC asserts that even if the Regional Plan is considered, the proposed Project does not unduly interfere with the Plan's vision of development for the region.

I conclude that EMDC has advanced an overly restrictive interpretation of Section 248(b)(1). While the statute does set forth only a limited list of items that the Board *must* consider, there is no suggestion in the statutory language that the list is an exclusive one. Had the legislature intended that the Board could not consider any evidence other than those items listed in the statute, the legislature presumably would have drafted the statute accordingly. The statute as drafted requires, first and foremost, that the Board determine whether a project will "unduly interfere with the orderly development of the region." Evidence that is relevant to this primary statutory requirement is thus properly within the scope of the Board's consideration of a project's compliance with Section 248(b)(1).

EMDC itself implicitly acknowledges that the Board's consideration is not limited to those items listed in the statute. In its Reply Brief, EMDC notes:

The items to which the Board must give "due consideration" under (b)(1) "are advisory, rather than controlling," and should not be construed as "giving individual municipalities the power to subvert utility projects statewide in scope

10. Section 248(b)(1) contains additional provisions that only apply to natural gas transmission lines.

11. EMDC Reply Brief at 8 (emphasis in original).

and broadly entrusted to a single planning and supervisory agency," namely the Board.¹²

If the items listed in the statute are advisory rather than controlling, it logically follows that the Board must have the discretion to consider additional items. Otherwise, the evidence in the record would be limited to those items listed in the statute, and the Board's decision – which must be based on the record evidence – would be constrained by those listed items.

Turning to the substantive issue, I conclude that the proposed Project would unduly interfere with the orderly development of the region, and thus fails to comply with Section 248(b)(1). I reach this conclusion for the fundamental reason that the dominant land uses in the region, and particularly in the conserved Champion Lands which surround the project site, are ones that depend on the undeveloped nature of the lands.¹³ As discussed more fully below with respect to the impact of the proposed Project on public investments, millions of dollars of public funds and years of effort have been directed toward preserving the remote, undeveloped nature of the Champion Lands, and toward protecting the recreational opportunities provided by those remote, undeveloped lands.

For the development of this region to remain orderly, it must respect the concerted efforts to preserve the remote, undeveloped nature of the Champion Lands. EMDC's proposal to site four, 329-foot-tall wind turbines on seventeen acres of land, in the midst of, and at the highest point among, the 132,800 acres of conserved land, would be fundamentally inconsistent with the

12. EMDC Reply Brief at 8 n. 3 (citations omitted).

13. This conclusion is reinforced by the relevant development considerations of the Regional Plan. EMDC asserts that the Regional Plan does not contain measures that are sufficiently specific to be cognizable under Section 248(b)(1). EMDC Reply Brief at 13–14. However, even if these considerations by themselves might not be sufficiently specific to support a conclusion that the proposed Project fails to satisfy Section 248(b)(1), they nonetheless provide a general context that can assist the Board's understanding of the existing and possible future development of the region.

The Regional Plan advises that the nature, scale, appearance and operation of a development should respect the character of its surroundings. The Regional Plan also counsels for minimal commercial and industrial development within Rural Agricultural and Forestry Areas unless "in an established industrial park or in an area specifically designated in the local zoning bylaw," and minimal development at elevations above 2,500 feet. Given that East Mountain is surrounded by remote, undeveloped, and conserved lands, lies within a Rural Agricultural and Forestry Area, and is well above 2,500 feet in elevation, the construction and operation of EMDC's proposed commercial windfarm would not be consistent with the orderly development of the region as envisioned by the Regional Plan.

surrounding conserved Champion Lands, and would thereby unduly interfere with the orderly development of the region.

C. 30 V.S.A. § 248(b)(2) – Need for Present and Future Demand for Service

Findings

64. The proposed Project is required to meet the need for present and future demand for service which could not otherwise be provided in a more cost-effective manner through energy conservation programs and measures and energy-efficiency and load-management measures, including, but not limited to, those developed pursuant to the provisions of sections 209(d), 218c, and 218(b) of Title 30. This finding is supported by Findings 65 to 70, below.

65. The proposed Project is required to meet the need for power in the larger region. Tr. 4/8/05 at 102–103 (Lamont). The need for the proposed Project is driven, in part, by demand for Renewable Energy Certificates ("RECs"). Tr. 4/8/05 at 106–107 (Lamont).

66. Many New England states have established programs designed to encourage the development of renewable energy sources. Under these programs, incentives are paid to developers of qualifying renewable energy projects through the sale of RECs. The demand for renewable power currently exceeds the ability of the marketplace to produce it. The proposed Project would help meet that demand. Lamont pf. at 2.

67. EMDC does not operate any energy efficiency or energy conservation programs, nor could it implement load management programs because it would not be selling electricity directly to consumers. Rubin pf. at 26.

68. Even with all cost-effective efficiency measures that could reasonably be implemented in Vermont, there would still be a need for energy. Tr. 4/6/05 at 120–121, 166–168, 174 (Lamont).

69. All of the electricity produced by the proposed Project would be purchased by LED, at a price five percent below the market price. Finding 85, below.

70. The electricity produced by the proposed Project will slightly decrease the market price for power. This will benefit all electricity customers in the region, with the benefit being somewhat greater for customers located closer to the project. Lamont pf. at 3.

Discussion

Section 248(b)(2) of Title 30 requires that the Board, prior to issuing a CPG, find that the proposed Project:

is required to meet the need for present and future demand for service which could not otherwise be provided in a more cost-effective manner through energy conservation programs and measures and energy-efficiency and load-management measures, including, but not limited to, those developed pursuant to the provisions of sections 209(d), 218c, and 218(b) of this title.

In Docket No. 6812, the Board addressed the application of this criterion to a merchant plant: a proposed power uprate of the Vermont Yankee Nuclear Power Station. In that docket, the Board noted:

At the present time, Vermont Yankee has not committed to sell the uprate power to Vermont utilities (with the exception of a small purchase by the Vermont Electric Cooperative) or to other entities. Nor is there any evidence that additional power from Vermont Yankee is needed to serve additional load in the state of Vermont. Thus, the proposed uprate of Vermont Yankee is not required for the purpose of serving load within the state of Vermont.¹⁴

In that case, the Board nonetheless determined that the proposed uprate of the Vermont Yankee plant satisfied the requirements of Section 248(b)(2), because with the regional nature of the power pool, regional need could suffice to meet the statutory standard.¹⁵ Relying on past precedent, the Board noted:

"the general good of the state" standard includes a recognition of the value to Vermont of the benefits to the entire New England Power Pool, from which Vermont purchases much of its power and upon which Vermont depends for reliability.¹⁶

In the present case, not only would EMDC's proposed Project help meet the regional need for power in general, it would also help meet a regional need for renewable resources in particular. The power from the proposed Project would also be sold directly to LED at below-market prices, thereby helping serve the in-state needs of LED ratepayers.

14. Docket No. 6812, Order of 3/15/04 at 21 (footnote omitted).

15. *Id.* at 21–22.

16. *Id.* at 21, *quoting* Docket 6545, Order of 6/13/02 at 106.

The need that the project would serve could not be met by energy efficiency, energy conservation or load-management programs. EMDC has no obligation to implement any such programs, and the only evidence in the record is that demand-side programs would not otherwise likely be implemented to the extent necessary to satisfy the need. Furthermore, part of the need is the regional demand for RECs, which those alternative programs would not provide. With the passage of Act 61 last year, Vermont has added to the regional demand for renewable resources, through the creation of incentives and requirements for Vermont's retail electricity providers to obtain power from renewable resources.¹⁷

KCG contends that the proposed Project fails to comply with Section 248(b)(2) because there are energy efficiency alternatives that could supply the need at less cost to ratepayers.¹⁸ According to KCG,

If the Board were to allow every merchant to build its plant without regard to the need for the power to be generated or the alternatives to such power, the Board would be unable to fulfill its obligations under the Statute. This is particularly true where, as here, the power to be generated by the merchant plant must be bought by a regulated utility and ratepayers must pay for it. The price of this electricity, while 5% below the market price for generated power, will be over 30% above the price that ratepayers would pay if energy efficiency measures were implemented. The Board has a duty to protect the ratepayers from such unwise energy decisions. In other proceedings the Board can, if avoiding emissions is deemed of sufficient importance, take steps to assure that energy efficiency measures equal to the projected output of EMDC's wind farm are implemented.¹⁹

This argument is unpersuasive, for a number of reasons. First, the record indicates that, even with all cost-effective efficiency measures that could reasonably be implemented in Vermont, there would still be a need for energy.

Second, even though LED would be obligated to purchase the output of the proposed Project, the price would be guaranteed to be below the market price, so that if LED did not need the power (or could find a less-expensive alternative, either supply-side or demand-side), it could resell the power at the market price. Thus, the project would not expose LED ratepayers to

17. See 30 V.S.A. §§ 8001–8006.

18. KCG Proposal for Decision at 40–41.

19. *Id.* at 41.

financial risk; instead, LED and its ratepayers should, at a minimum, secure a five percent profit.²⁰

Finally, one of the needs that the proposed Project would meet is the regional need for renewable resources. Demand-side alternatives would not address this need.

D. 30 V.S.A. § 248(b)(3) – System Stability and Reliability

71. The Project will not adversely affect system stability and reliability. This finding is supported by Findings 72 through 82, below.

72. To evaluate the potential impacts on the stability and reliability of the electrical system, EMDC and LED performed the East Haven Wind Farm Interconnection Study (exh. LED Rice-2) ("System Impact Study"), based on the design of the proposed Project. Rice pf. (3/10/05) at 5; Rice pf. (4/14/05) at 5; exh. EHWF-AR-1; exh. LED Rice-2.

73. The proposed Project will not have a negative impact on system stability. The Vermont Electric Power Company ("VELCO") has concluded that the proposed Project will not have an adverse impact on system stability, provided that it is constructed and operated as proposed and is constructed in compliance with the conditions set forth in the testimony of CVPS witness Jockell. As the planner and operator of Vermont's high voltage transmission system, VELCO is the organization in the state that possesses the greatest expertise on matters of system stability. Rice reb. pf. at 6; Litkovitz pf. at 4.

74. The wind turbines, transformers, and power lines would utilize a number of systems to isolate the Project from the power grid in the event of equipment failure. The wind turbines would be disconnected from the transmission line in the event of ground faults, phase faults, over-current, under and over voltage, under and over frequency, and system imbalance. In addition, the turbines would have power electronics that provide soft-start capability to reduce starting surges, to ride through short-term voltage dips, and to provide or consume reactive power to improve voltage regulation on the 34.5 kV system. Rubin pf. at 26-27.

20. In this way, if LED could meet its need at a lower cost through demand-side or supply-side alternatives, LED could leverage its funds by purchasing and then reselling the power from the proposed Project, thereby increasing by five percent the funds that it used to purchase the project's power.

75. The transmission line and interconnection facilities have been designed to meet the standards applicable to Qualifying Facilities under Board Rule 4.106. The design adequately addresses issues of thermal capability, fault protection, protection against closing into a de-energized system, synchronization, manual isolation (with visible air gap) for maintenance, voltage regulation, frequency variation, and system power factor. The equipment would be specified, designed, installed and tested in accordance with applicable requirements, industry standards (such as American National Standards Institute ("ANSI")) and good utility practice. Rice pf. (3/10/05) at 6.

76. The sole interconnection of LED with the New England system is through the CVPS system. Therefore, CVPS system stability and reliability could be adversely impacted by the operation of the EMDC facility through the LED system, and could be impacted by excess output entering the CVPS system for delivery to Hyde Park and Ludlow. Frankiewicz pf. at 3.

77. CVPS reviewed the steady-state portion of the System Impact Study, and concluded that the proposed Project would not adversely affect system reliability, provided that the recommendations listed in the System Impact Study become conditions in a CPG, and are followed. CVPS determined that voltage excursions due to the aggregate wind generation coming on-line or tripping off-line would be within an acceptable range, and would not adversely impact CVPS customers or the transmission system, provided that the EMDC Project and controls operate as described in the System Impact Study, and further provided that power factor correction capacitors (one 2,400 kVAR capacitor bank energized at 34.5 kV and four 600 kVAR capacitor banks energized at 12.47 kV) are installed on the LED system. CVPS did not review the stability portion of the System Impact Study. Jockell pf. at 3-4, 5; exh. CVPS-JFJ-1; exh. LED Rice-2.

78. The proposed Project will not have a negative impact on system reliability provided it is constructed and operated as proposed, and provided the recommendations included in the System Impact Study are met, including those specific conditions listed in the confidential portion at page 3 of DPS witness Litkovitz's prefiled testimony dated August 12, 2005. Litkovitz pf. at 2-3.

79. The existing LED 34.5 kV transmission system and its associated equipment are adequate to support the EMDC interconnection. Rice pf. (3/10/05) at 5.

80. The proposed 34.5 kV line extension would have its own short circuit protection at the Burke Mountain substation terminal to protect against faults on this line impacting LED's existing customers. Rice pf. (3/10/05) at 6.

81. There are protection concerns associated with the interconnection of the proposed EMDC Project. The CVPS Protection Engineer has made recommendations to LED and EMDC regarding how to mitigate these concerns. A suitable protection scheme, with appropriate controls and Operating Practices, can be designed and implemented. The proposed Project would not have an adverse impact on CVPS customers or the CVPS transmission system if, as a condition of any CPG that the Board issues for the Project, a condition is included requiring LED and EMDC to have, implement, and adhere to a completed protection plan with appropriate controls and Operating Practices. Jockell pf. at 4-5; Litkovitz pf. at 3.

82. Islanding of the combined LED/CVPS system would be addressed by the 34.5 kV operation and modifications as stipulated by CVPS. Islanding of the LED system would be addressed in conjunction with the combined LED/CVPS system or by separate modifications to the LED hydro plant relay and control systems, whichever is ultimately deemed to be most appropriate. Rice pf. (4/14/05) at 5; Rice reb. pf. at 5; exh. LED Rice-2.

Discussion

EMDC, LED, CVPS, VELCO, and the Department agree that the Project will not adversely affect system stability and reliability, provided that: (1) it is constructed and operated as proposed; (2) the recommendations described in the System Impact Study are met; and (3) certain conditions are imposed on its operation and construction. No evidence was presented to the contrary. Although some unresolved protection issues remain, the record demonstrates that these issues can be resolved in the post-certification process. The Department recommends, and I concur, that the following conditions should be included in any CPG issued by the Board in this proceeding:

- The proposed Project must be constructed and operated as proposed, and all recommendations in the System Impact Study must be met.
- EMDC and LED must work with CVPS to finalize an agreed-upon suitable protection scheme, with appropriate controls and operating practices. The

protection scheme must be submitted to the parties for comment, and must be approved by the Board, prior to the proposed Project being brought on-line.

- All recommendations in the testimony of CVPS witness Jockell must be implemented.

E. 30 V.S.A. § 248(b)(4) – Economic Benefit

Findings

83. The proposed Project will result in an economic benefit to the state and its residents. This finding is supported by Findings 84 to 90, below.

84. The proposed Project would generate property tax revenues to the State of Vermont and to the Town of East Haven. Based on the income method of property valuation, the annual property taxes would be approximately \$75,000 per year which, over twenty years, would provide a net present value of approximately \$940,000. Rubin pf. at 27, 30; Ide pf. at 12; Lamont pf. at 3.

85. EMDC has entered into a Power Purchase Agreement and related agreements with LED. Under these agreements, EMDC will sell the entire net output of the proposed Project to LED and deliver it at the Burke Mountain substation on LED's system. These agreements provide that:

- EMDC will pay for the design, permitting and construction of the transmission line conveying the power to the Burke Mountain substation;
- EMDC will pay the ongoing maintenance costs of the transmission line;
- EMDC will sell the entire net output of the proposed Project to LED at a price five percent below the market clearing price established by ISO-New England at the St. Johnsbury node; and
- EMDC will convey to LED ten percent of any Renewable Energy Certificates from the proposed Project.

Rubin pf. at 7–8, 27–28; exh. KCG-Cross-4.

86. The contract for purchase of the power virtually assures an economic benefit to LED and its ratepayers. LED would purchase the power at five percent below the market price, and could

resell the power into the market at the market clearing price, thereby earning a five percent profit on the transaction.²¹ Lamont pf. at 3.

87. The Renewable Energy Certificates would have value to LED. LED could resell the certificates to load-serving entities that must comply with renewable portfolio requirements. Lamont pf. at 3.

88. The proposed Project should result in a slight reduction in the Locational Marginal Price for power. The reduction should be greater closer to the Project, so that ratepayers in Vermont are likely to benefit the most from this reduction in power costs. Lamont pf. at 3.

89. The proposed Project would provide both short-term and long-term economic benefits to the region from increased employment. In the short term, construction of the proposed Project would require as many as 24 workers, who would contribute to the local economy through their spending on rooms, meals, and other items. Once operational, the proposed Project would employ part-time workers equivalent to three full-time employees. Rubin pf. at 31.

90. Generation by the proposed Project would likely displace fossil-fired generation elsewhere, thereby avoiding air emissions that would have been produced by the fossil-fueled generation. Lamont pf. at 3; Findings 103 – 104, below.

Discussion

Pursuant to 30 V.S.A. § 248(b)(4), the Board must find that the proposed Project "will result in an economic benefit to the state and its residents" before it may issue the project a certificate of public good.

I recommend that the Board find that the proposed Project will result in an economic benefit to the state and its residents. The project, if constructed, would generate property tax payments to the state and to the local municipality. The project would also provide an economic benefit to LED and its ratepayers by affording them access to power at a below-market price. All Vermont ratepayers should see some modest savings as a result of additional generation being constructed in Vermont, thereby slightly lowering the Locational Marginal Price for power. The

21. The profit would actually slightly exceed 5 percent: $5\% \text{ of the market price} \div 95\% \text{ of the market price} = \text{a profit of } 5.26\%$.

new employment associated with construction and operation of the facility would provide additional economic benefits to the region.

KCG presents several arguments as to why the proposed Project would not provide an economic benefit to the state and its residents. KCG first contends that the principal benefits from the project are avoided air emissions, that EMDC has overvalued the avoided emissions, and that energy conservation and demand-side management offer less costly alternatives for avoiding those emissions.²² I conclude that these criticisms deserve little weight. Regardless of the appropriate value for the avoided emissions, it is clear that they have some value, and thus provide a benefit to the state and its residents. Even if no value were ascribed to the avoided emissions, the proposed Project would result in the other economic benefits listed above, and thereby satisfies Section 248(b)(4).

As for KCG's contention that energy efficiency and other demand-side resources could avoid the same emissions at a lower cost, that may be true, but EMDC is a private developer and not a regulated, integrated utility, and as such has no obligation to invest in efficiency or demand-side measures. Therefore, the issue is not a comparison of new wind generation to new demand-side resources, but rather a comparison of new wind generation to no new resources of any kind. Under that appropriate comparison, the proposed wind turbines will result in avoided air emissions.

KCG argues that because EMDC would receive tax credits associated with the proposed Project, and because the Renewable Energy Credits would be paid for by ratepayers in other New England states, much of the asserted economic benefits of the project are in fact transfers of money rather than true benefits. These arguments are unpersuasive. The economic benefits to Vermont may, in part, result from federal tax policy and other states' renewable energy policies. However, the Board's decision in this Docket cannot modify those policies, and to ignore the resulting economic benefits to Vermont would be to ignore the reality of those policies.²³

22. KCG Proposal for Decision at 66–67.

23. To accept KCG's argument would also require an accounting of all publicly-funded subsidies for all other supply-side and demand-side alternatives, an undertaking that goes far beyond a reasonable scope of inquiry under Section 248(b)(4).

KCG also disputes EMDC's projections of the amount of power that the proposed Project is likely to generate, asserting that EMDC has relied on flawed meteorological data, flawed assumptions, and flawed analysis. According to KCG, due in part to a less-robust wind resource and greater ice-related shutdowns than EMDC assumed, the proposed Project should be expected to generate less than 14,000 MWh per year, rather than the substantially higher production that EMDC has estimated.²⁴ Here again is a dispute with little import for the determination under the statutory criterion. Even using KCG's lower estimate of power production, the proposed Project would still provide economic benefits to the state and its residents.

F. 30 V.S.A. § 248(b)(5) – Aesthetics, Historic Sites, Air and Water Purity, the Natural Environment, and the Public Health and Safety

Findings

91. The proposed Project will have an undue adverse effect on aesthetics, historic sites, air and water purity, the natural environment or the public health and safety, with due consideration having been given to the criteria specified in 10 V.S.A. §§ 1424a(d) and 6086(a)(1) through (8) and (9)(K). Specifically, the proposed Project will have an undue adverse effect on aesthetics and the natural environment. This finding is supported by Findings 92 – 265, below.

(1) Public Safety

92. The proposed Project will not unreasonably jeopardize public safety. This finding is supported by Findings 93 through 97, below.

93. During certain climatic conditions, ice has the potential to form on the blades of the wind turbines. The majority of ice that would be shed from the turbine blades would fall straight down off the blades. However, if the turbine blades are spinning, ice could be thrown distances of approximately 800 feet. LeBlanc reb. pf. at 3.

94. The possibility of shed ice striking a person, outside of EMDC's property, is dependent on several factors, including:

24. KCG Proposal for Decision at 45–59, 67.

- The probability of climatic factors occurring such that ice would form on the turbine blades;
- The probability that the turbine would be operating, and the blades spinning;
- The probability that a person would be at a specific location where shed ice would land.

LaBlanc reb. pf. at 3–4.

95. The probability of a person outside of EMDC's property being harmed by ice shed from the proposed turbine is approximately 1 in 11 million. LeBlanc reb. pf. at 5–6.

96. An icing operating protocol could be developed that would allow for the remote monitoring of ice detectors that can trigger the automatic shutdown of turbines in the event of icing. Turbines could then be started after visual confirmation that ice has dropped from the turbine blades. Rubin reb. pf. at 15; exh. EHWF-ML-Reb3 at 6–8.

97. If an effective ice detection and shutdown system is utilized, the probability of ice falling on adjacent property is negligible. LeBlanc reb. pf. at 5.

Discussion

Although there is no guarantee that shed ice from the proposed Project would never harm a person, the probability of such an event occurring is exceedingly small. In addition, EMDC has indicated that it would accept a condition that required an operating protocol that would shut down the turbines during icing conditions.²⁵ As this would even further reduce the risk, I recommend that the Board impose such a condition if it issues a CPG for the proposed Project.

As the Department points out: "To enable the enjoyment of the benefits of a reliable electric supply, we tolerate emissions from power plants which have documented health effects on those downwind."²⁶ The Board does not need to find that the proposed Project would present *no* risks. It would be impossible to make such a finding for any project. However, the minuscule risk presented by shed ice from the proposed Project is an acceptable one.

25. EMDC reply brief at 61.

26. Lamont pf. at 5.

(2) Outstanding Resource Waters

[10 V.S.A. § 1424(a)(d)]

98. There are no Outstanding Resource Waters at, or adjacent to, the proposed Project. Rubin pf. at 32.

(3) Water and Air Pollution

[10 V.S.A. § 6086(a)(1)]

99. The proposed Project would not have an undue adverse impact on water or air quality. This finding is supported by Findings 100 through 136, below.

Air Pollution

100. The proposed Project would not have an undue adverse impact on air quality. This finding is supported by Findings 101 through 111, below.

101. The proposed Project would result in a small amount of earth disturbance, producing minimal dust. EMDC would ensure that construction operations minimize dust. Rubin pf. at 32.

102. The construction and operation of the proposed Project, including the use of emergency generators that are rated at less than 450 horsepower, does not require an air pollution control permit from the Vermont Department of Environmental Conservation. Exh. EHWF-MR-20.

103. Wind energy displaces energy produced by fossil-fueled plants and results in decreased air emissions. These decreased air emissions improve air quality in New England and help mitigate the effects of global climate change. High pf. at 4; CLF exh. RSG-1.

104. For each megawatt hour produced by the proposed Project, between 0.49 and 1.16 pounds of NO_x, 1.75 to 4.26 pounds of SO_x, and 829 to 1,339 pounds of CO₂ would be avoided. High pf. at 8; CLF exh. RSG-1.

Discussion

The parties disagree on the economic benefits of reduced emissions. Attempts to quantify those benefits involve multiple inputs (MWh produced by the proposed Project, a dollar value for each air pollutant, etc.), all of which have been disputed in this case. However, the Board does not need to make a precise determination of the economic benefit of reduced air

emissions from fossil-fuel-fired generation plants. It is evident that the proposed Project would produce air quality benefits to Vermont by displacing other generation sources that produce emissions, and would not have an undue adverse impact on air quality.

Noise

105. The proposed Project would not produce unduly adverse noise levels. This finding is supported by Findings 106 through 111, below.

106. The projected noise levels from the proposed turbines would be as follows:

- At one foot from the nose cone — approximately 104 db(A);
- at 0.8 miles from the turbines — 38 dB(A);
- At 1.6 miles from the turbines — 32 dB(A);
- At 3.2 miles from the turbines — 26 dB(A).

These levels do not take into account factors influencing noise attenuation, such as wind and the dampening effect of vegetation.

Rubin pf. at 34.

107. The normal range of human speech is 50 to 70 dB(A). Rubin pf. at 34–35.

108. There are some hunting camps within a few miles of the summit of East Mountain. There are no permanent residences within five miles of the summit. Rubin pf. at 35.

109. Noise generated from the proposed turbines could be above background noise levels in the Essex Timber lands within 3.2 miles from the proposed turbines. The noise from the proposed turbines would reach the range of normal conversation within approximately 500 feet of the turbines. Hewson pf. at 23.

110. Noise from construction activities would have a large impact on wildlife in the vicinity of the proposed Project site. However, this impact would be temporary and would last only for the duration of the construction activities. Tr. 4/5/05 at 49, 53, 96 (Parsons).

111. There are currently loud noises, due to wind and loose metal, emanating from the buildings at the site of the proposed Project. This noise does not appear to have had an adverse effect on the use of the summit for wildlife habitat. Tr. 4/5/05 at 94–95 (Parsons).

Discussion

The proposed turbines would produce some noise. However, the noise would dissipate quickly from the source such that it would not produce an undue adverse impact. Construction activities would have a large impact on noise levels near the site, but would be of short duration, and, therefore, would not produce undue adverse impacts.

(4) Headwaters

[10 V.S.A. § 6086(a)(1)(A)]

112. The proposed Project would meet all applicable health and environmental conservation regulations regarding reduction of the quality of the ground or surface waters flowing through or upon headwaters areas. This finding is supported by Findings 113 through 117, below.

113. The site of the proposed Project, including the location of the proposed turbines and Radar Road, is located above 2,500 feet in elevation. Rubin pf. at 36.

114. Pursuant to 10 V.S.A. § 1253, all waters above 2,500 feet in elevation are designated as Class A waters.

115. EMDC must obtain a stormwater discharge permit from ANR for the proposed Project, pursuant to 10 V.S.A. § 1264. Monks pf. at 3.

116. The stormwater permit is designed to control pollutants, which impact water quality, and the volume of water resulting from newly created impervious surfaces, which can destabilize receiving waters. Tr. 3/31/05 at 39 (Monks).

117. It is possible to develop stormwater management devices for the proposed Project that would protect water quality. Tr. 3/31/05 at 34–35 (Monks).

Discussion

Title 10 § 6086(a)(1)(A) describes headwaters of watersheds as characterized by steep slopes and shallow soils or areas above 1,500 elevation.²⁷ The proposed Project is located in a headwaters area. The appropriate regulatory protections, through the stormwater permit and Erosion Prevention and Sediment Control Plan ("EPSC") (See Findings 138 through 142, below)

27. 10 V.S.A. § 6086(a)(1)(A).

should ensure that water quality in the vicinity of the proposed Project is maintained.²⁸ If the Board issues a CPG for the proposed Project, EMDC should be required to file an approved stormwater permit and EPSC Plan with the Board and parties, pursuant to the post-certification requirements discussed below.

(5) Waste Disposal

[10 V.S.A. § 6086(a)(1)(B)]

118. The proposed Project would meet all applicable health and environmental regulations for waste disposal, and will not involve the injection of waste materials or any harmful or toxic substances into ground water or wells. This finding is supported by Findings 119 through 125, below.

119. The site of the proposed Project is identified by ANR as hazardous waste site #91-1152. The contaminants identified at the site were polynuclear aromatic hydrocarbons ("PAH"). The Army Corps of Engineers has performed some site remediation; however, further action is required. Woods pf. at 1, 3; exh. ANR-BW-2.

120. The Vermont Department of Health ("DOH") has determined that asbestos is present in some of the abandoned buildings at the site. Woods pf. at 1, 3; exh. ANR-BW-2.

121. Despite the presence of PAH and asbestos, construction activities at the summit of East Mountain could proceed if there are sufficient plans to identify and manage hazardous substances that might be encountered. Woods pf. at 4.

122. The construction plan for the proposed Project should include a plan for identifying, isolating, managing, and disposing of any hazardous materials encountered during excavation activities. Woods pf. at 4.

123. EMDC proposes to install one 1,750 kVA pad-mounted transformer at the base of each turbine. The proposed transformers would each contain approximately 500 gallons of cooling oil. Rubin pf. at 9.

124. The ANSI/Industry of Electrical and Electronics Engineers ("IEEE") standard for integral oil retention would not be triggered by the volume of oil in the proposed transformers.

28. See ANR initial brief at 8.

EMDC will provide oil containment in the form of a concrete berm on the foundation pad, if it uses concrete pads. EMDC did not provide details of oil containment provisions if a fiberglass transformer pad were used. Rubin pf. at 9; tr. 3/31/05 at 48 (Rubin).

125. EMDC is proposing to install back-up generation at the site. This would consist of either one generator with a 150 kW capacity located inside an existing building or an approximately 10 kW generator located within each turbine tower. The generators would either be fueled by diesel or propane. Rubin pf. at 10; tr. 3/31/05 at 115 (Rubin).

Discussion

Parties have done an admirable job compiling and presenting information regarding hazardous waste issues, and in particular, the presence of asbestos at the site. However, ANR and the Department of Health have primary jurisdiction over the mitigation of hazardous chemicals such as PAH and asbestos. If a CPG for the proposed Project is issued, EMDC should be required to provide mitigation plans that comport with these agencies' regulations. Such a plan would need to be filed with the parties and the Board, pursuant to the requirements of the post-certification process described below.

Although the ANSI/IEEE standard does not require oil containment for the transformer cooling oil, I recommend that the Board require such oil containment, given the sensitive nature of the site, if the Board issues a CPG for the proposed Project. In that event, EMDC should be required to file a proposed oil containment plan pursuant to the post-certification procedures described below.

EMDC does not provide details regarding the emergency generators or the fuel source for the generator. If the Board issues a CPG, it should require EMDC to file final details during the post-certification process, according to the guidelines described below. The final details should include measures for fuel containment (such as the use of double-walled fuel storage tanks).

(6) Water Conservation

[10 V.S.A. § 6086(a)(1)(C)]

126. The proposed Project would not require water for operational purposes. Water needed for construction would be brought on-site by the contractor, unless one of the existing wells at the summit or cantonment area can be redeveloped. Rubin pf. at 39.

Discussion

EMDC has indicated that, if possible, it might redevelop one of the existing wells at the summit or cantonment area to use for construction purposes. Given the past contamination at the site, EMDC should be required to perform a sufficient array of testing, on any existing well that would be developed, to ensure that the water does not contain contaminants that could be spread to other areas of the site if the water was used for construction purposes. Prior to utilizing the well, the results of such tests would need to be filed with the Board and parties, pursuant to the post-certification review process described below. If it is determined that no contamination is present in a well, EMDC should then be permitted to utilize the well for construction purposes (assuming that the Board issues a CPG for the proposed Project).

(7) Floodways and Shorelines

[10 V.S.A. §§ 6086(a)(1)(D)&(F)]

127. The proposed project is not located in a floodway and is not located near the shoreline of any lake, pond, or river. Rubin pf. at 40.

(8) Streams

[10 V.S.A. § 6086(a)(1)(E)]

128. The proposed Project would maintain the natural condition of affected streams and will not endanger the health, safety, or welfare of the public or adjoining landowners. This finding is supported by Findings 129 through 130, below.

129. There are a total of 12 stream crossings along Radar Road. Several of these streams are first order, small streams with a channel width generally under 10 feet with well-vegetated and

natural streambanks. There are two larger crossings, the East and West branch of the Moose River. Exh. EHWF-JP-2 at 2–3.

130. Transmission structures would be placed so as to avoid streams and their banks. Parsons pf. at 6.

Discussion

The proposed project would not have an undue adverse impact if care is taken to avoid adverse impact on the streams or banks when placing transmission poles. Consequently, if the Board issues a CPG for the proposed Project, EMDC should be required to submit plans showing the exact location of the proposed transmission structures. Such a plan would need to be filed with the Board and parties in accordance with the post-certification requirements set forth below.

(9) Wetlands

[10 V.S.A. § 6086(a)(1)(G)]

131. The proposed Project would not violate the Vermont Wetlands Rules relating to significant wetlands. This finding is supported by Findings 132 through 136, below.

132. There are a total of ten wetlands in areas adjacent to Radar Road. Two of these wetlands are Class II, beaver-influenced wetlands. The remaining eight wetlands are Class III wetlands, consisting mainly of speckled alder swamps and wet meadows. Parsons pf. at 10; exh. EHWF-JP-2.

133. There are no wetlands located at the sites of the proposed turbines or within 100 feet of the proposed turbine sites. Exh. EHWF-JP-2 at 3.

134. Wildlife that utilize the Class II wetlands along Radar Road could be adversely affected by human disturbance, including transport of heavy equipment along Radar Road. In particular, wading birds, waterfowl, mink, otter, black bear, and moose use the wetlands for breeding, nesting, and feeding. Austin pf. at 13.

135. An existing power line runs through an open water wetland (Wetland #9 — as identified on exh. EHWF-JP-2) and would be removed and replaced for the proposed Project. This portion of the line should be relocated from the open water wetland. Austin pf. at 13.

136. There will be minimal impact to the two Class II wetlands located adjacent to Radar Road if proper construction methods are utilized and the wetlands are spanned by the proposed transmission line. Pagel pf. at 2.

Discussion

The proposed Project would not unduly affect wetlands near the project area if certain precautions are taken. At a minimum, Petitioner should follow the guidance contained in Wetlands Fact Sheet #14: Utility Line Crossings,²⁹ and work with ANR to minimize impacts to wildlife habitat present in the Class II wetlands along Radar Road. Consequently, if the Board issues a CPG for the proposed Project, EMDC should be required to submit plans showing the exact location of the proposed transmission structures and any clearing that would take place to place the poles. Such a plan would need to be filed with the Board and parties in accordance with the post-certification requirements set forth below.

(10) Sufficiency of Water and Burden on Existing Water Supply

[10 V.S.A. §§ 6086(a)(2)&(3)]

137. The proposed Project would not require water for operational purposes. Water needed for construction would be brought on-site by the contractor, unless one of the existing wells at the summit or cantonment area can be redeveloped. Rubin pf. at 39.

Discussion

For the reasons noted above with respect to water conservation (10 V.S.A. § 6086(a)(1)(C)), EMDC should be required to perform appropriate testing on any existing well that would be developed, with the results filed with the Board and parties, subject to the post-certification review process described below.

29. Exh. KCG-JP-Cross-2.

(11) Soil Erosion

[10 V.S.A. § 6086(a)(4)]

138. The proposed Project would not cause unreasonable soil erosion or reduction of the land to hold water so that a dangerous condition may result. This finding is supported by Findings 139 through 142, below.

139. ANR requires that EMDC develop an Erosion Prevention and Sediment Control ("EPSC") Plan that depicts various site-specific erosion measures to be employed at the project site. The EPSC Plan is particularly critical given that construction activities along Radar Road have the potential to discharge to Class A waters. Greenwood pf. at 3–4.

140. Erosion control focuses on preventing soil from mobilizing, while sediment control focuses on capturing soil that has already eroded. Erosion control measures, such as mulching, are far more effective than sediment control measures, such as silt fence. Greenwood pf. at 5.

141. For construction during the winter months (October 15 to May 1), a Winter EPSC Plan should be developed for ANR's review. Greenwood pf. at 4.

142. An effective EPSC Plan could be developed for the proposed Project that would be effective in preventing impacts on water quality. Tr. 3/31/05 at 12, 15 (Greenwood).

Discussion

An EPSC Plan, appropriately designed and implemented, would prevent or substantially reduce erosion and protect water quality. Accordingly, if the Board issues a CPG for the proposed Project, I recommend that the Board require EMDC to develop an EPSC Plan, in conjunction with ANR, and file the Plan with the Board and parties for approval by the Board, pursuant to the post-certification review process described below.

(12) Transportation Systems

[10 V.S.A. § 6086(a)(5)]

143. The proposed Project would not cause unreasonable congestion or unsafe conditions with respect to use of the highways, waterways, railways, airports and airways, and other means of transportation existing or proposed. This finding is supported by Findings 144 through 147, below.

144. The approximate amount of traffic that would occur if construction of the proposed Project were completed in a six-month period is as follows:

- Delivery of turbines and other major components: 30–40 truck trips over several weeks;
- Delivery of concrete: 20–30 truck trips over several weeks;
- Delivery of other equipment: 20–30 truck trips over several months;
- Delivery of utility poles, wires, etc.: 20–30 truck trips over several weeks; and
- Commuting of workers to site: 30 trips per day.

Rubin pf. at 44.

145. No employees would be permanently stationed at the site. Traffic to the site related to routine maintenance is expected to be three to five trips per week. Rubin pf. at 43–44.

146. The proposed Project would not adversely affect the State highway right-of-way, and an access permit from the Agency of Transportation is not required. Rubin pf. at 43–44; exh. EHWF-MR-24.

147. EMDC will adhere to the guidelines issued by the United States Department of Transportation, Federal Aviation Administration ("FAA") regarding lighting structures over 200 feet in height. Finding 174, below.

(13) Educational Services

[10 V.S.A. § 6086(a)(6)]

148. The proposed Project would not result in additional students in the public school system, and thus would not place an unreasonable burden on the ability to provide educational services. Rubin pf. at 46; exh. EHWF-MR-26.

(14) Municipal Services

[10 V.S.A. § 6086(a)(7)]

149. The proposed Project would not create any unreasonable burdens on the ability of East Haven to provide municipal services. Rubin pf. at 47–48; exhs. EHWF-MR-16, EHWF-MR-27.

(15) Rare and Irreplaceable Natural Areas

[10 V.S.A. § 6086(a)(8)]

150. The proposed Project would not have an undue adverse impact on any rare and irreplaceable natural areas if the proposed Project is conditioned as described below. This finding is supported by Findings 151 through 154, below.

151. There is an area of old-growth forest, approximately 150 acres in size, on the southwestern slope of East Mountain (the "Old-Growth Area") adjacent to the project site. This area is considered a state significant natural community by the Vermont Non-Game and Natural Heritage Program. Parsons pf. at 14; exh. EHWF-JP-2 at 9.

152. The Old-Growth Area is located within the Essex Timber Company's 84,000-acre portion of the Champion Lands. These 84,000 acres are subject to a permanent conservation easement and a permanent public access easement. Findings 260 and 53, below.

153. The Conservation Easement identifies the "East Mountain Old Growth Area" as an area of ecological significance, describing the area as follows:

One of the best examples of original montane spruce-fir forest in Vermont, which contains spruce trees over 260 years old. This dark, mossy forest on the high, southwest slope of East Mountain is part of a relatively small contiguous area with a wide diversity of ecosystems that is of county-wide significance. The entire upper basin, including the old growth forest, is a NGNHP site of statewide significance.

Within this Old-Growth Area, the Conservation easement prohibits forest management activities, operation of mechanized or motorized equipment, physical disturbance or alteration of the surface of the ground, and any activity that would alter the natural water level or flow. Exh. KCG-WJ-21 at 3, 9.

154. The edge of the proposed clearing for proposed turbine number four would be approximately 25 feet from the edge of the Old-Growth Area. Exh. EHWF-JP-2 at 9; tr. 4/5/05 at 74 (Parsons).

Discussion

There is no indication that construction activities would have a significant impact on the Old-Growth Area. It is possible that operation of the proposed Project in the winter could adversely impact the old-growth forest through the shedding of ice from the turbine blades.

However, EMDC has agreed to implement an operating protocol that would essentially shut down the turbines during icing conditions to prevent ice from being shed onto adjacent lands. Such an operating protocol should adequately protect the Old-Growth Area, and should be a condition of any CPG that is issued for the proposed Project.

(16) Aesthetics

[10 V.S.A. § 6086(a)(8)]

155. The proposed Project will have an undue adverse effect on the scenic or natural beauty of the area and on aesthetics. This finding is supported by Findings 156 through 180, below.

156. The rugged, rural character of East Mountain is an important consideration in evaluating the aesthetic impacts of the proposed Project. Exh. DPS-1 at 4. The surrounding landscape is sensitive to visual impacts due to its relative intactness, strong sense of contrast and sense of order. Exh. DPS-1 at 9.

157. The ridgelines and valleys in the immediate vicinity of East Mountain tend to exhibit an east-west orientation. This general orientation creates a striated landform that appears highly layered when viewed from the south, with views of the proposed Project likely to see the wind turbine structures as part of the larger landscape. Exh. DPS-1 at 4.

158. This same east-west orientation may result in greater visibility of the wind turbines when viewed from the east and from the west. Exh. DPS-1 at 4.

159. The aesthetic impact of the proposed Project is dependent on the context in which it is viewed. The impact would be different when viewed from a tranquil natural area as compared to viewing the project from a traveled highway. Tr. 4/1/05 at 90–92 (Boyle).

160. The proposed Project is likely to be visible from many surrounding locations. Exh. DPS-1 at 7–8, and figure 4; Jewell pf at 9; exh. EHWF-TB-3 at figure 2. Based on topographic features and ignoring (for the moment) vegetative cover, approximately 70 percent of the land area within four miles of the project site is projected to have potential views of the proposed Project. Moving further away, the potential visibility drops to less than 50 percent of the land area between four and eight miles from the project site. Exh. DPS-1 at 7; exh. DPS-4.

161. Taking vegetation into consideration significantly reduces the areas from which the proposed wind turbines may be visible. However, views of the proposed wind turbines would still remain open and obvious from the following locations:

- two routes, each consisting of a series of roads in sequential south-north alignment, along ridges to the west of the project site in the towns of Burke and Newark:
 - the first route consists of Darling Hill Road extension to Burke Green Road to Center Pond Road, (hereinafter referred to collectively as the "Burke Green Road Route");
 - the second route consists of Burke Hollow Road to Sugar House Road to Newark Street (hereinafter referred to collectively as the "Sugar House Road Route")
- the Burke Mountain toll road in Burke;
- Maidstone Lake;
- Victory Bog, near the public access; and
- at least two areas within the Champion Lands – the Madison Basin and along an existing trail that leads to the East Mountain Old Growth Area.

Exh. DPS-1 at 10–11; Boyle/Buscher pf. at 5; exh. EHWF-TB-3 at 7–16 and figure 3; Findings 261 – 262, below.

162. When viewed from distances of six miles or greater, the size and scale of the proposed Project would be greatly reduced, which, in turn, substantially lessens the impacts of the project on the region's scenic qualities. Kane pf. at 9.

163. The Burke-Green Road Route is approximately seven to eight miles west of the proposed Project, and in some locations provides relatively unobstructed, panoramic views of the project site to the left or right of the road (depending on direction of travel). Exh. DPS-1 at 11; exhs. DPS-5 and DPS-6; exh. EHWF-TB-3 at 8–10 and figure 4. The Sugar House Road Route is approximately nine to ten miles west of the project site. In some locations, it offers open views of the project site. Exh. EHWF-TB-3 at 10–11 and figure 4.

164. The open views of the proposed Project from the Burke-Green Road and Sugar House Road routes would be sufficiently distant (at least seven miles away) so as not to be shocking or offensive to the average person. Exh. DPS-1 at 19; Boyle/Buscher pf. at 5, 8, 12.

165. The proposed Project would be highly visible for extended periods of time from certain areas within the Champion Lands. When viewed from those locations, the wind turbines would be fundamentally incompatible with the conserved, remote, rugged, undeveloped nature of the lands that surround the project site. Decker pf. at 19; exh. DPS-1 at 7; exh. DPS-5; Jewell pf. at 10 – 12; exhs. KCG-WJ-8, KCG-WJ-9, KCG-WJ-12 and KCG-WJ-13.

166. Maidstone Lake State Park is located approximately six to seven miles to the east of the project site. The park offers a campground and a day-use facility, which includes a beach. The park is a summer attraction in the region, with an estimated 16,000 visitors each year. Exh. DPS-1 at 6, 12; exh. EHWF-TB-3 at 13–14 and figure 4.

167. At Maidstone Lake Park, the proposed Project would be clearly visible from the beach, the boat launch area, and on the lake itself. From these distances, however, the size and scale of the four wind turbines would be greatly reduced, dramatically diminishing their impact on scenic resources. Also, the recreational activities at the lake would tend to distract the viewer. Kane pf. at 9; Boyle pf. reb. at 15–16; exh. DPS-1 at 12; exh. DPS-7; exh. EHWF-TB-3 at 13–14 and figure 13.

168. Burke Mountain lies approximately 9 miles to the southwest of the project site. Approximately 50,000 people visit the mountain each summer. Exh. DPS-1 at 6; exh. EHWF-TB-3 at 16 and figure 3.

169. Only limited views of the project site are available at Burke Mountain, within Darling State Park. These views are at one section of the toll road – at the crest of Burke Mountain, just above the Poma ski lift – and from the fire tower. These views of the proposed Project would be quite limited and distant, such that the turbines would not be a major component of the landscape. Exh. DPS-1 at 11; exh. DPS-7; exh. EHWF-TB-3 at 16–17 and figure 16.

170. The Victory Bog area, within the Victory Basin Wildlife Management Area, provides an open view of the project site from a distance of approximately nine and one-half miles. This view is located a few hundred feet from the public access point, headed up the road towards Granby. (The proposed Project would not be visible from the public access point.) At this distance, the wind turbines would not be significantly more noticeable than the existing radar base structures. Exh. DPS-1 at 12; exh. DPS-9; exh. EHWF-TB-3 at 14–15 and figure 14.

171. On East Mountain, a number of buildings from the abandoned radar base and an access road are presently visible. Exh. DPS-1 at 3.

172. EMDC's proposed transmission line is unlikely to be visible above the tree canopy, except perhaps near the summit of East Mountain where it may slightly exceed the height of the treeline. The transmission line is unlikely to have an adverse effect on aesthetics. Boyle/Buscher pf. at 10.

173. EMDC has taken measures to mitigate the aesthetic impact of the proposed Project. The color of the towers – pale blue-gray – should minimize their visibility in that they would tend to fade into the typical sky background. Kane pf. at 10; Rubin pf. at 9; exh. DPS-1 at 16.

174. Because the proposed wind turbines would exceed 200 feet in height, guidelines issued by the FAA call for lighting. The FAA has issued a preliminary determination that recommends that each turbine be lit with a single white strobe light during the daytime and a single red strobe light at night. The lights would be contained in a single fixture on top of each turbine's nacelle, and would operate twenty-four hours each day. The daytime light would operate at 40 flashes per minute, the nighttime light at 20 flashes per minute. Rubin pf. at 13; Rubin reb. pf. at 16–17; Boyle/Buscher pf. at 10; exh. EHWF-MR-12; exh. EHWF-MR-Reb-11a, 11b, 11c and 11d.

175. The lenses of the lights would focus the peak intensity of the light – 2000 candela³⁰ – in a band between horizontal and 3 degrees above horizontal, such that the intensity of the light would decrease substantially below the horizontal plane. Rubin pf. at 13–14; Boyle/Buscher pf. at 9–10; exh. EHWF-MR-13.

176. The nearest residence with a clear view of the proposed lights is on Darling Hill, approximately 7.6 miles distant and at 1700 feet mean sea level. The Darling Hill area is located three degrees below horizontal compared to the proposed turbine lights; at that angle, the lights would produce 350 candela. Rubin pf. at 13–14; Boyle/Buscher pf. at 9–10.

177. Given their distance, intensity, and intermittence, the proposed lighting would not present any significant visual impact. Boyle/Buscher pf. at 9–10; exh. DPS-1 at 14.

30. One candela equals the light emitted by one candle. Boyle/Buscher pf. at 9.

178. The FAA has proposed new standards that would eliminate the daytime lighting, and allow for lighting of only the two outer turbines. If the proposed standards become final, EMDC will apply to the FAA for a revised lighting determination. Tr. 3/14/05 at 59–64 (Rubin).

179. The Town of East Haven does not have a town plan, nor any zoning regulations that would prohibit EMDC's project. Boyle/Buscher pf. at 12.

180. The proposed Project would not produce unduly adverse noise levels. Findings 106 through 111, above.

Discussion

The Board has adopted the Environmental Board's Quechee analysis for guidance in determining whether a proposed project would have an undue adverse impact on aesthetics. As the Board has previously explained:

In order to reach a determination as to whether the project will have an undue adverse effect on the aesthetics of the area, the Board employs the two-part test first outlined by the Vermont Environmental Board in Quechee, and further defined in numerous other decisions.

Pursuant to this procedure, first a determination must be made as to whether a project will have an adverse impact on aesthetics and the scenic and natural beauty. In order to find that it will have an adverse impact, a project must be out of character with its surroundings. Specific factors used in making this evaluation include the nature of the project's surroundings, the compatibility of the project's design with those surroundings, the suitability of the project's colors and materials with the immediate environment, the visibility of the project, and the impact of the project on open space.

The next step in the two-part test, once a conclusion as to the adverse effect of the project has been reached, is to determine whether the adverse effect of the project is "undue." The adverse effect is considered undue when a positive finding is reached regarding any one of the following factors:

1. Does the project violate a clear, written community standard intended to preserve the aesthetics or scenic beauty of the area?
2. Have the applicants failed to take generally available mitigating steps which a reasonable person would take to improve the harmony of the project with its surroundings?

3. Does the project offend the sensibilities of the average person? Is it offensive or shocking because it is out of character with its surroundings or significantly diminishes the scenic qualities of the area?³¹

In addition to the Quechee analysis, the Board's consideration of aesthetics under Section 248 is "significantly informed by overall societal benefits of the project."³²

EMDC proposes that the Board depart from its precedent and modify the Quechee analysis as its witness, Peter Owens, has recommended. Mr. Owens contends that the first step of the Quechee test – whether a project "fits" with its surroundings – tends to focus on "sameness," and is thus difficult to apply for a project, such as a wind generation facility, that fundamentally differs from the existing landscape. Mr. Owens proposes that, instead, the question of a windfarm fitting in with its surroundings take into consideration four principles:

1. Windfarms are compatible with well-established Vermont values of environmental conservation, stewardship and self-sufficiency.
2. Windfarms can be an integrated component of Vermont's working, resource-based landscape.
3. There is an environmental symbiosis or "fit" between a windfarm and locations where the wind resource is most abundant.
4. Experience elsewhere suggests that that [*sic*] more people know about and experience well-planned windfarms, the more attractive they find them.³³

I recommend that the Board not adopt Mr. Owens' proposed modification of the Quechee analysis. As the Department correctly notes, the Board does not limit its aesthetic analysis under Section 248 to the Quechee test as traditionally applied in Act 250 proceedings.³⁴ Instead, the Board also considers the overall societal benefits of a proposed project. In this way, Section 248 and Board precedent do not mandate rejection of a proposed project that, while presenting significant aesthetic impacts, would also provide significant societal benefits. For such a project, the Board would evaluate both those adverse aesthetic impacts and the positive societal benefits. I thus conclude that Mr. Owens' proposed modification of the Quechee analysis is unnecessary.

31. *In re Petition of Tom Halnon*, CPG NM-25, Order of 3/15/01 at 10–11 ("Halnon").

32. *In Re: Northern Loop Project*, Docket 6792, Order of 7/17/03 at 28 ("Northern Loop").

33. Owens pf. at 3.

34. Department Reply Brief at 6–7.

I also conclude that Mr. Owens' proposal is unwise. Under his proposed principles, a wind generation project that is starkly out of context with the surrounding landscape could nonetheless be found to "fit" because of the wind resource that is present. Such an approach would wrongly change the analysis from one of aesthetics to one of resource economics. It is the former, not the latter, that the Board must evaluate under Section 248(b)(5).

Turning to the aesthetic issues presented by the proposed Project, including consideration of the "overall societal benefits of the project," the Board must carefully consider two State of Vermont policy goals that generally conflict when applied to wind generation facilities proposed for a ridgeline: restricting development on Vermont's high elevations, and promoting in-state renewable energy resources. The first of these goals is reflected in the statutory requirement for approval under Act 250 for construction of improvements for commercial, industrial or residential use at elevations above 2500 feet.³⁵ Environmental Board precedent has long respected this policy; for example, in its seminal *Quechee* decision, the Environmental Board noted that ridgelines deserve special attention in assessing the potential for a project's aesthetic impacts.³⁶ However, this state policy does not represent an absolute prohibition on high-elevation development. Act 250 requires approval of high-elevation construction, but does not completely bar it.³⁷ The state has repeatedly allowed extensive ski-area development on Vermont's mountains, not only through issuance of Act 250 Land Use Permits but also through permission for ski areas to be sited on state-owned high-elevation lands.

The state policy of supporting development of in-state renewable energy is most recently reflected in the passage last year of Act 61.³⁸ Among the provisions of Act 61 are amendments to the state's renewable energy goals, as codified at 30 V.S.A. § 8001(a). Act 61 establishes those goals as follows:

35. 10 V.S.A. §§ 6001(3)(A)(vi), 6081. (Utility projects that require approval under Section 248 are exempted from this requirement. 10 V.S.A. § 6001(3)(D)(ii).)

36. *Re: Quechee Lakes Corporation*, No. 3W0411-EB and No. 3W0439-EB, Findings of Fact, Conclusions of Law and Order at 19 (11/4/85).

37. 10 V.S.A. §§ 6001(3)(A)(vi), 6081, 6086. Had the legislature intended that no development whatsoever take place on Vermont's ridgelines or other high-elevation locations, it could have so provided in the applicable state statutes.

38. P.A. No. 61 (2005 Vt., Bien. Sess.).

§ 8001. **Renewable energy goals**

(a) The general assembly finds it in the interest of the people of the state to promote the state energy policy established in section 202a of this title by:

- (1) Balancing the benefits, lifetime costs, and rates of the state's overall energy portfolio to ensure that to the greatest extent possible the economic benefits of renewable energy in the state flow to the Vermont economy in general, and to the rate paying citizens of the state in particular.
- (2) Supporting development of renewable energy and related planned energy industries in Vermont, in particular, while retaining and supporting existing renewable energy infrastructure.
- (3) Providing an incentive for the state's retail electricity providers to enter into affordable, long-term, stably priced renewable energy contracts that mitigate market price fluctuation for Vermonters.
- (4) Developing viable markets for renewable energy and energy efficiency projects.
- (5) Protecting and promoting air and water quality by means of renewable energy programs.
- (6) Contributing to reductions in global climate change and anticipating the impacts on the state's economy that might be caused by federal regulation designed to attain those reductions.³⁹

Similarly, "the state energy policy established in section 202a," (referenced in the above-quoted text) provides that:

§ 202a. **State energy policy**

It is the general policy of the state of Vermont:

- (1) 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.
- (2) To identify and evaluate on an ongoing basis, resources that will meet Vermont's energy service needs in accordance with the principles of least cost integrated planning; including efficiency, conservation and load management

39. 30 V.S.A. § 8001(a). In furtherance of these goals, Act 61 established the Sustainably Priced Energy Enterprise Development ("SPEED") program and (conditional) Renewable Portfolio Standards for Vermont retail electricity providers. 30 V.S.A. §§ 8004, 8005.

alternatives, wise use of renewable resources and environmentally sound energy supply.⁴⁰

Therefore, assessing the aesthetic impacts of the proposed Project (or of any high-elevation wind generation project) involves balancing the state's objectives of restricting mountain-top development and supporting renewable energy.

The only previous high-elevation, utility-scale wind generation project that the Board has reviewed under Section 248 was Green Mountain Power Corporation's Searsburg facility, in Docket No. 5823. In that case, the Board acknowledged the conflict between the benefits of that renewable project and its aesthetic impact, noting:

if the state is to develop wind generation as a renewable resource, these types of projects must be located at these very visible, high elevations to capture sufficient wind energy to make them viable economically. We must, then, be willing to allow some intrusion into the visual landscape to be able to reap the benefits of this type of renewable energy. This proposal very clearly brings out the reality that, in terms of our energy choices, all have some significant costs to society.⁴¹

In Docket No. 5823, the Board applied the Quechee analysis to the proposed Searsburg wind generation facility and concluded, in the first step of the analysis, that it would have an adverse effect on aesthetics. Moving to the second Quechee step, the Board then concluded that the aesthetic impact would not be unduly adverse, because: (1) there were no applicable written community standards designed to protect the aesthetics of the area; (2) the project should not offend the sensibilities of the average person if the public is adequately educated about the benefits of wind power; and (3) GMP had taken all reasonable steps to mitigate the visual impacts of the project, "including the elaborate, multi-year siting process that it undertook to find a site with minimal impacts."⁴²

While the Board's *Searsburg* decision provides useful guidance, the aesthetic impact of EMDC's proposed Project must, of course, be judged based on the facts particular to it. Under the first step of the Quechee analysis, I conclude that the proposed Project would have an adverse impact on the aesthetics and the scenic and natural beauty of the surrounding area. The proposed

40. 30 V.S.A. § 202a.

41. Docket No. 5823, Order of 5/16/96 at 28.

42. *Id.* at 27–28.

Project, with its 329-foot tall commercial scale wind turbines, would be out of context with its remote, rugged, undeveloped surroundings. *See Searsburg* at 27 ("It is very clear that the siting of a large, utility scale, wind generation project at high elevation on an undeveloped ridgeline of the Green Mountains will have an adverse aesthetic impact on the area").

To determine whether the proposed Project's adverse aesthetic impact would be undue, the Board applies the second step of the Quechee analysis: does the project violate a clear, written community standard, has EMDC failed to take all reasonable steps to mitigate the project's aesthetic impact, or does the project offend the sensibilities of the average person?

To qualify as a clear, written community standard, a provision must be "intended to preserve the aesthetics or scenic beauty of the area" where the project is located, and must apply to specific resources in the project area. *In re Halnon*, NM-25, Order of 3/15/01 at 22 n. 5; *Re: George and Diana Davis*, #2S1129-EB, Findings, Conclusions and Order at 9 (12/15/04); *Re: Town of Barre*, #5W1167-EB, at 21 (6/2/94).

I conclude that the proposed Project would not violate any clear, written community standard. The Town of East Haven does not have a town plan, nor any zoning regulations that would prohibit EMDC's project. I also conclude that there are no provisions in the Regional Plan for the Northeast Kingdom that are sufficiently specific to constitute a clear, written community standard. *See In re: Times and Seasons, LLC and Hubert K. Benoit*, No. 3W0839-2-EB (Altered) at 42–43 (11/4/05).

I turn next to whether EMDC has taken generally available mitigating steps to improve the harmony of the proposed Project with its surroundings. EMDC has selected a color for the towers that will help them blend into the background of the sky. EMDC has proposed lighting that minimizes adverse visual impacts while still complying with FAA guidelines.⁴³ EMDC also has chosen a previously developed site, which in most circumstances would be expected to significantly mitigate the net aesthetic impacts of the wind turbines. And, in fact, the choice of this site does help mitigate the aesthetic impacts for distant viewers (by which I mean viewers several miles away). For viewers in relative close proximity to the proposed Project, however,

43. If the Board does issue a CPG, I recommend that it include a condition requiring EMDC to obtain a revised lighting determination if the FAA revises its guidelines.

the nature of the site contributes substantially to the wind turbines' adverse aesthetic impact, notwithstanding its previous development. The site is on the highest point in the area, in the midst of a vast expanse of land that not only is remote, and undeveloped, but has seen large expenditures of time and public funds to conserve the land in this condition. Therefore, I conclude that, overall, the site selected by EMDC, although previously developed, does not effectively mitigate the aesthetic impacts of the proposed Project, but instead exacerbates those impacts for viewers within the former Champion Lands.

Finally, as to whether the proposed Project would be shocking and offensive, I conclude that, other than within the Champion Lands, areas from which the proposed Project would be visible would be sufficiently distant that the wind turbines would not offend the sensibilities of the average person. I recognize that many area residents testified as to their opinions that, even at several miles distant, the windfarm would result in significant adverse aesthetic impacts when viewed from their property.⁴⁴ Nonetheless, when viewed from these distances, I conclude, based on the record evidence, that the proposed windfarm would not be so out of character with its surroundings, or significantly diminish the scenic qualities of the area, as to be offensive or shocking to the average person.

I reach a different conclusion with respect to the Champion Lands, which provide a significantly different (and much closer) context. The proposed Project would be so out of character with the surrounding Champion Lands as to be shocking and offensive.

From within the Champion Lands, the aesthetic impact of EMDC's proposed windfarm is analogous to that of the proposed gravel extraction operation at issue in the Environmental Board's 1986 *Percy* decision,⁴⁵ which followed closely on the heels of its *Quechee* order.⁴⁶ In *Percy*, the Environmental Board reviewed a proposed commercial gravel pit that would be located adjacent to the Putnam State Forest, which includes the Moss Glen Falls Natural Area. The Environmental Board noted that the *Quechee* decision required that "special attention" be given to the aesthetic impacts in certain sensitive areas. The Environmental Board concluded

44. KCG presented testimony from many individuals or couples regarding the aesthetic impacts of the proposed Project from their properties. Intervenors Jon Day and Vernon Gray provided similar testimony.

45. *In Re: Paul and Dale Percy*, No. 5L0799-EB, Findings of Fact, Conclusions of Law and Order (3/20/86).

46. *Percy* (3/20/86) was issued four and one-half months after the *Quechee* decision (11/4/85).

that the proposed gravel pit lay within the context of such a sensitive area, the Moss Glen Falls Natural Area, which that board characterized as:

aesthetically unique because of the unusually high woodland falls and *because it has been preserved by the state for the enjoyment of its residents and visitors.*⁴⁷

The Environmental Board further concluded that the gravel extraction activities:

when viewed as a whole within this rural enclave that is the home of the Moss Glen Falls Natural Area, is offensive because it is wholly out of character with its surroundings and would significantly diminish the scenic qualities of both the Natural Area and the neighborhood.⁴⁸

While there are significant differences between the gravel pit at issue in Percy and the windfarm at issue here, they are comparable in that both would be entirely out of character with surroundings that the state has preserved in an undeveloped condition for the public's use and enjoyment.

Under the analysis presented by the Department's witness on aesthetics, the proposed Project's impacts on recreational users of the Champion Lands would not be considered shocking and offensive because those users should not be considered to be "average" persons for purposes of the Quechee test.⁴⁹ The Department's witness stated:

While we understand the recreational nature of the lands surrounding the project, we believe that in general the users of these lands are not properly classified as "average" persons under Quechee. The majority of users within the ETC [Essex Timber Company lands] and WMA [Wildlife Management Area] are hunters and snowmobile users. These users must make a concerted effort to enter these remote areas. While these areas allow public access, such access is not general in nature.⁵⁰

The Department's witness further contends "that much of the WMA and ETC lands are not 'public' with respect to our analysis because they require considerable and concerted effort to reach and are not generally accessible."⁵¹

47. *Percy* at 20 (emphasis added).

48. *Percy* at 20.

49. Exh. DPS-1 at 15.

50. *Id.* at 10.

51. *Id.* at 18.

This argument fails to recognize the very values that the public investment in the Champion Lands is designed to protect: the remote, rugged, undeveloped nature of the lands. The users of the lands are seeking the remote, wilderness experience that is the cornerstone of the substantial public investment in the former Champion Lands. Indeed, the concerted effort that users must make to reach these remote, undeveloped lands makes the intrusion of commercial-scale wind turbines that much more out of context and, consequently, even more shocking and offensive.⁵²

I further conclude that because the proposed Project is so out of context with the surrounding Champion Lands, and because of the substantial effort and cost invested in the preservation of the Champion Lands, the benefits of this 6 MW renewable energy project – which have been discussed earlier in this Proposal for Decision – are insufficient to offset the project's significant adverse aesthetic impact on those lands.

For these reasons, I conclude that the proposed Project would have an undue, adverse impact on aesthetics and the scenic and natural beauty.

(17) Historic Sites

[10 V.S.A. § 6086(a)(8)]

Findings

181. The proposed Project would be located at the site of the former North Concord Air Force Station, which the United States government constructed starting in 1955. The government closed the facility in 1962. Exh. DPS-1 at 3; Finding 4, above.

182. The Air Force station is located at the summit of East Mountain and in the cantonment area. At the summit are the remnants of five radar towers, ranging in height from 30 to 65 feet tall, in addition to a few ancillary buildings. At present, the towers contain only their steel beam structures, corrugate metal sheathing, concrete foundations and cantilevered observation decks.

52. Even if one were to accept this argument for purposes of applying the Quechee test, such that one concluded there were no undue adverse impact on aesthetics for the "average" person, the proposed Project would nonetheless materially jeopardize or interfere with the public's use or enjoyment of the Champion Lands, as discussed below with respect to Act 250 Criterion 9(K).

The structures are deteriorated due to salvaging of materials, vandalism, and harsh weather. Rubin pf. at 50.

183. The former Air Force station is a good example of a Cold War historic property, and represents one of only two such properties in Vermont. The State Historic Preservation Office ("SHPO") has determined that the site is eligible for listing in the National Register of Historic Places at both the national and state level because it is of exceptional importance in the legacy of the Cold War. Rubin pf. at 50; exh. EHWF-MR-28.

184. Demolition of most of the summit structures (as EMDC proposes) would have an adverse impact on the historic resources. The adverse impact would result from:

- the physical destruction, or damage to, the property;
- the removal of the property from its historic location; and
- the change to the character of the property's use, or of physical features within the property's setting, that contribute to its historical significance.

Rubin pf. at 51.

185. The adverse impacts of the proposed Project on the historic resources would not be undue if EMDC implemented the following mitigation measures recommended by SHPO:

- a. Prior to demolition or relocation, the contributing historic properties and associated landscape features must be recorded in accordance with SHPO's "Photographic Standards for Historic Structures." Recorded materials must be archived at SHPO and at an appropriate local archive to be agreed upon.
- b. One of the summit tower structures must be repaired and partially rehabilitated to provide a permanent record of the site's history. In addition, an interpretive exhibit must be constructed that provides a detailed documentation of the site's history, significance and association with the Cold War. Details of the tower rehabilitation and interpretive exhibit must be refined at a later date and made available for SHPO's review.
- c. Efforts must be made to retain building footprints where feasible to serve as a permanent record of the site's history and facilitate future interpretation.
- d. Reasonable public access to the site must be allowed.

Rubin pf. at 51; exh. EHWF-MR-29; Ide pf. at 13–14.

186. In its original Petition, EMDC proposed to satisfy the SHPO's recommendation for an interpretive center by constructing a visitors center at the summit. The center would have provided information on the Cold War history of the site as a radar base, as well as afforded 360

degree views of the area and provided information on wind power. EMDC projected that the center would have the potential to attract between 6,000 and 25,000 visitors annually. Rubin pf. at 16, 21; Comen pf. at 32–34.

187. Construction of such a visitors center at the summit of East Mountain would not be necessary to comply with the SHPO's recommendations. By attracting large numbers of visitors to the summit, the visitors center raises potential safety concerns and could adversely impact wildlife. Ide pf. at 14–15; Austin pf. at 12.

188. The SHPO confirmed that interpretive signs could satisfy its recommendation for an interpretive exhibit. Such signs would need to be professionally produced, appropriately weather-proofed, approximately 3 feet by 5 feet in size, and with pictures and narrative regarding the former radar base. The signs would need to be installed at the summit and at the cantonment area. Exh. EHWF-MR-redirect-1.

189. The proposed Project will not have an undue adverse impact on historic sites, including archeological resources. Findings 181 – 188, above; Rubin pf. at 52; exh. EHWF-MR-30.

Discussion

The State Historic Preservation Office has determined that the former North Concord Air Force Station on East Mountain is an historic site "of exceptional importance in the legacy of the Cold War."⁵³ Because the proposed Project would result in demolition of most of the former radar station buildings on the summit, it would have an adverse impact on historic sites. EMDC has agreed to take appropriate and sufficient steps – i.e., those that the SHPO has recommended – to mitigate this adverse impact.

KCG contends that EMDC has failed to demonstrate that it has taken all generally available mitigating steps that a reasonable person would take to mitigate the impact on historic resources. According to KCG, EMDC is relying on a prior SHPO approval letter that was premised on the repair and partial rehabilitation of one of the summit buildings; because EMDC

53. Exh. EHWF-MR-28 at 2.

no longer proposes to do so, KCG contends, EMDC has failed to take a generally available mitigating step.⁵⁴

Contrary to KCG's assertions, the record supports the conclusion that EMDC has, in fact, agreed to take all reasonably available mitigating steps to reduce the impacts on the historic resources. EMDC only abandoned its plan to rehabilitate a building on the summit as a visitors center when other state agencies raised concerns, and the SHPO has agreed to EMDC's revised mitigation proposal.⁵⁵

The Department recommends that any CPG issued for the proposed Project include as conditions the mitigation measures that SHPO has recommended. The Department further proposes that the Board require EMDC to develop a mitigation and public access plan to incorporate any conditions and limitations on public access, including those related to public safety and protection of natural resources.⁵⁶ These would be appropriate conditions and should be included in the CPG, if the Board decides to approve the proposed Project.

(18) Wildlife (including endangered species and necessary habitat)

[10 V.S.A. § 6086(a)(8)(A)]

Section 248(b)(5) provides that the Board must find that a proposed project "will not have an undue adverse effect on aesthetics, historic sites, air and water purity, the natural environment and the public health and safety" The statute further provides a list of criteria, primarily those found in Act 250, to which the Board must give "due consideration" in examining the proposed project. In many of the Board's Orders involving Section 248, the Act 250 criteria are listed separately with each discussed individually.

The only criterion that specifically addresses wildlife is 10 V.S.A. § 6086(a)(8)(A). This portion of the statute states, in its entirety:

Necessary wildlife habitat and endangered species. A permit will not be granted if it is demonstrated by a party opposing the applicant that a

54. KCG Proposal for Decision at 121–122.

55. See exh. EHWF-MR-Redirect-1.

56. Department Brief at 57–58.

development or subdivision will destroy or significantly imperil necessary wildlife habitat or any endangered species, and

- (i) the economic, social, cultural, recreational, or other benefit to the public from the development or subdivision will not outweigh the economic, environmental, or recreational loss to the public from the destruction or imperilment of the habitat or species, or
- (ii) all feasible and reasonable means of preventing or lessening the destruction, diminution, or imperilment of the habitat or species have not been or will not continue to be applied, or
- (iii) a reasonably acceptable alternative site is owned or controlled by the applicant which would allow the development or subdivision to fulfill its intended purpose.

Although in Section 248(b)(5) the General Assembly has provided the Board with guidance as to what specific environmental impacts to examine in reviewing a proposed project, it did not limit the scope of the Board's review to only the incorporated Act 250 criteria.⁵⁷ The statute specifically provides that the Board must find that a proposed project will not have an "undue adverse effect on . . . the natural environment." A project such as this has the potential of multiple and substantial impacts on wildlife. To consider fully whether those impacts constitute an "undue adverse effect on . . . the natural environment," this review should not be constrained to only the effects on "endangered species" and "necessary wildlife habitat" as those are considered under Act 250.

Generally, the potential loss of an individual animal would not support a finding that a project would have an undue adverse impact under Section 248(b)(5), unless the individual animal belongs to a listed species (or other species of particular concern). If, on the other hand, a project presents a threat to a population of a species, this would likely result in a determination that the project would have an undue adverse impact on that species.⁵⁸ This result is supported

57. See, for example, Docket 6860, Order of 1/28/04 (reviewing the potential health impact of electro-magnetic fields emanating from a proposed transmission line).

58. In examining population impacts, a distinction should be made between species that breed in the area and migratory species. For breeding birds and bats, mortality rates should be considered in relation to the local population, while for migratory species, the regional population should be considered. Kerlinger pf. at 13-14; Kerlinger reb. pf. at 10.

by the legislature's definition of "necessary wildlife habitat" as "decisive to the survival of a species of wildlife."⁵⁹

MAMMALS

Ungulates

190. The proposed Project would not have an undue adverse impact on ungulates or any necessary habitat utilized by these animals. This finding is supported by Findings 191 through 193, below.

191. There is no mapped deer wintering habitat at, or in proximity to, the site. Austin pf. at 9.

192. Moose rely on high elevation spruce/fir forest cover to survive winter conditions. There is evidence of moose wintering several hundred feet below the summit of East Mountain; however, it is unlikely that these moose would be impacted by the proposed turbines. Austin pf. at 9.

193. If the access road is plowed during winter, the large piles of snow likely to accumulate along the side of the road could impede the ability of moose to move within their winter habitat. Creating regular openings in the snow banks along the plowed road can facilitate movement of the moose. EMDC has indicated that the road would not be plowed during the winter except in the event of an emergency. Austin pf. at 10.

Discussion

The proposed Project would not directly impact deer or moose or their habitat. The primary indirect impact would be restriction on the movement of moose within their winter habitat if the access road is plowed during the winter. Accordingly, if it issues a CPG for the proposed Project, I recommend that the Board require EMDC, in the event that it does plow the road in non-emergency situations, to create openings in the snow banks along the road to enable movement of moose.

59. 10 V.S.A. § 6001(12).

Carnivores

194. The proposed Project would not have an undue adverse impact on carnivores or any necessary habitat utilized by these animals. This finding is supported by Findings 195 through 203, below.

195. Black bears require large areas of remote forest and a variety of food resources in order to achieve successful reproduction and avoidance of humans. Forested wetlands and beech stands are important feeding habitat for black bears and directly affect bear survival and cub production. The proposed Project will not involve the removal or conversion of bear-scarred beech or wetland habitats. Austin pf. at 10.

196. Black bears can be displaced from feeding habitats by human presence. However, regular maintenance of the proposed Project, at the levels described by EMDC, would not significantly displace black bears. Austin pf. at 11.

197. Black bears likely utilize the blow-downs, upturned trees, and other natural features which occur near the summit of East Mountain as den sites for hibernation. Black bears do not typically maintain fidelity to individual den sites. There are numerous appropriate den sites near East Mountain. Austin pf. at 10–11.

198. The movement of black bears in the vicinity of the Searsburg wind generating facility was studied after one year of post-construction operation. The study concluded that operation and maintenance of the wind turbines did not appear to disrupt the historic movement patterns of bears in the vicinity of the Searsburg project. Exh. EHWF-Cross-WK-4.

199. Bobcats are generalists that utilize a wide variety of habitats. Bobcats will feed on several food sources, but the preferred food source is rabbits and hares. Kilpatrick pf. at 22.

200. A bobcat and nearly grown kitten have been observed near the summit of East Mountain. Kilpatrick pf. at 22–23. However, home ranges for females with kittens can be as high as several square kilometers in size. Additionally, the snow depth at the summit of East Mountain can limit the ability of bobcats to travel. Parsons reb. pf. at 8–9.

201. The proposed Project will not have an undue adverse impact on bobcats. Austin pf. at 15.

202. There is suitable habitat and prey base to support pine marten, a state-listed endangered species, on East Mountain. Austin pf. at 15; Kilpatrick pf. at 35. There are reports of possible pine marten tracks in the vicinity of East Mountain. Willy pf. at 5; Kilpatrick pf. at 25; tr. 3/30/05 at 51 (Willy); tr. 4/5/05 at 154-155 (Kilpatrick).

203. The extensive montane spruce/fir habitat and deep snow found at the summit of East Mountain is considered important habitat for pine marten. Austin pf. at 15.

Discussion

The proposed Project would not directly impact necessary habitat of black bears or bobcats. Increased human access to the site could displace bears and bobcats from the area. If the Board issues a CPG for the proposed Project, in order to minimize the impact of the proposed Project on black bears and bobcats, I recommend that the Board require EMDC to develop an access control plan in coordination with ANR. The plan should be submitted for approval by the Board pursuant to the post-certification review procedures described below.

KCG contends that the noise that would be produced from the wind turbines would cause a loss of approximately 1,000 acres of habitat for black bears due to bear avoidance of the areas.⁶⁰ However, KCG's wildlife expert has admitted that he is not an expert on the effect on noise.⁶¹ Furthermore, evidence from the Searsburg project indicates that bears have not been displaced from the vicinity of the turbines at that location.

KCG contends that the fact that a bobcat and nearly grown kitten were observed on East Mountain, "clearly indicates that those necessary habitats [to support bobcats] are available within the proximity of where the photo was taken."⁶² However, necessary habitat is defined by statute as: "concentrated habitat which is identifiable and is demonstrated as being decisive to the survival of a species of wildlife at any period in its life including breeding and migratory periods."⁶³ The evidence, including the testimony of KCG's witness, shows that bobcats are habitat generalists (see Finding 199, above), and consequently, it does not appear that the proposed Project would impact habitat that is specifically required for the survival of bobcats.

60. Tr. 4/5/05 at 46-60 (Kilpatrick).

61. Tr. 4/5/05 at 168 (Kilpatrick).

62. Kilpatrick pf. at 22-23.

63. 10 V.S.A. § 6001(12).

This is further supported by the statement of ANR's witness that he does not have any concerns regarding the impact of the proposed Project on bobcats or their habitat.⁶⁴

There is no positive evidence that pine marten are present on East Mountain, although there are suitable conditions for this state-listed endangered species at the site. If the Board issues a CPG, and if the presence of pine marten at the site is established, ANR or EMDC should be allowed to request that the access control plan be modified to address the needs of this species.

Small Mammals

204. The proposed Project would not have an undue adverse impact on small mammals or any necessary habitat utilized by these animals. This findings is supported by Findings 205 through 209, below.

205. Several species of small and medium-sized animals, including red squirrels, snowshoe hare, red-backed vole, and raccoons, are present on East Mountain. The majority of these species are common and adapt readily to human disturbance. Austin pf. at 14–15.

206. East Mountain supports a substantial population of snowshoe hares. The snowshoe hare represents an important prey species for several predators, including bobcats, fisher, and coyotes. Kilpatrick pf. at 26–27.

207. A yellow-nosed (or rock) vole was captured on talus slopes near the summit of East Mountain in the fall of 2004. The location of the captured yellow-nosed vole was approximately 200 to 220 feet southeast of the proposed location of turbine # 3. The yellow-nosed vole is listed as a rare species and has been found at only eight other locations in Vermont. Kilpatrick pf. at 15; tr. 4/5/05 at 247–248 (Kilpatrick).

208. The yellow-nosed vole is a habitat specialist that requires forested wet areas and talus slopes. Direct disturbance of the necessary habitat, or exposure and drainage of such habitat, has the potential to affect the population of yellow-nosed voles. Additionally, the yellow-nosed vole does not compete well with more abundant species of voles, such as the meadow vole, present at

64. Austin pf. at 15.

the summit of East Mountain. Clearing associated with the proposed Project could allow other vole populations, including the meadow vole, to increase. Kilpatrick pf. at 36; Austin pf. at 15.

209. Protection of the yellow-nosed vole habitat, through limited clearing, preservation of the drainage patterns in the area, and ensuring that the talus slopes and nearby forested areas remain adequately moist, are critical for protecting the population of yellow-nosed vole. Tr. 4/5/05 at 246–247 (Kilpatrick).

Discussion

KCG contends that the proposed Project would impact necessary habitat for snowshoe hares, porcupines, mice, shrews, and voles. With the exception of the yellow-nosed vole, however, KCG does not provide any evidence that there will be destruction of "concentrated habitat which is identifiable and is demonstrated as being decisive to the survival of a species of wildlife at any period in its life including breeding and migratory periods."⁶⁵ Furthermore, there would be only limited clearing of the habitat of these animals at the summit.⁶⁶

If it issues a CPG, the Board should require EMDC to work with ANR to develop a plan that will protect the habitat of the yellow-nosed vole during construction and operation of the proposed Project. This should include protecting the drainage of the talus slope where the population is located and implementing a monitoring plan for the population for a minimum of three years. The plan should be filed with the Board and parties for approval by the Board, in accordance with the post-certification requirements described below.

Birds and Bats

Radar Study

210. EMDC did not conduct any avian radar studies for the proposed Project. Tr. 3/14/05 at 75–76 (Rubin).

65. 10 V.S.A. § 6001(12).

66. Approximately 1–1.3 acres of spruce-fir trees would be cleared along the summit. Rubin pf. at 15; Parsons reb. pf. at 11–12.

211. The only avian radar study conducted in connection with the proposed Project did not produce reliable results regarding the impact of the proposed Project on bats and birds. This finding is supported by Findings 212 through 219, below.

212. ANR retained DeTect, Inc. to assess passage rates of birds and bats over East Mountain. DeTect performed the survey from September 28, 2004, to November 4, 2004. Exh. ANR-AK-2 at 3–4.

213. DeTect identified a total of 599,829 "targets" at East Mountain during the study period. Austin supp. pf. (12/22/04) at 24.

214. DeTect's study indicated that 67.5% of the targets were flying at altitudes of 400 feet above ground level or less during periods of good visibility, placing the targets within the rotor swept zone of the proposed turbines. Exh. ANR-AK-2 at 23.

215. DeTect used vertical radar, but not horizontal radar, to collect data. Tr. 3/17/05 at 133 (Kelly).

216. The DeTect study was flawed in its use of only vertical radar. Typical avian radar studies utilize both vertical and horizontal radar. Horizontal radar is necessary to document the location, flight direction, and flight speed of targets. Horizontal radar provides a more reliable method of determining whether a target is a vertebrate or invertebrate. Pelletier/Roy reb. pf. at 3–4.

217. DeTect utilized general tracking and counting software for its radar study at the project site that DeTect had not previously used in the field. Tr. 3/17/05 at 215–216 (Kelly).

218. Passage rates reported by DeTect's study are one to two orders of magnitude greater than other published studies, and the percentage of low flying targets differs significantly from other radar studies. Pelletier/Roy reb. pf. at 5.

219. DeTect's methodology was not able to reliably distinguish between birds, bats, insects, and precipitation. Roy/Pelletier reb. pf. at 5; Kerlinger reb. pf. at 3.

Discussion

The radar study relied upon by ANR had serious methodological flaws that produced unreliable results. The study did not utilize standard practices for avian radar studies. The results of the study are highly inconsistent with the results from other avian radar studies.

Consequently, the study results cannot be used to determine the risk of the proposed Project on bats and birds.

Bats

220. There is insufficient information to determine whether the proposed Project would have an undue adverse impact on bat populations. This finding is supported by Findings 221 through 233, below.

221. There are nine species of bats in Vermont: the little brown bat, big brown bat, northern long-eared bat, eastern pipistrelle, red bat, hoary bat, silver-haired bat, small-footed bat, and the Indiana bat. Darling pf. at 6.

222. The Indiana bat, a state and federally listed endangered species, has been found in Vermont only in the Champlain Valley. Darling pf. at 13.

223. The red bat, hoary bat, and silver-haired bat are long-distance migrants. The remaining species are resident species which typically travel from summer roosting areas to hibernacula. The distance from summer roosting area to hibernaculum can vary from a mile to several hundred miles, but a typical distance is within fifty miles. Darling pf. at 6–8.

224. The closest known hibernaculum is the Ely mine, approximately 55 miles south of East Mountain. The Ely mine is Vermont's largest hibernaculum for small-footed bat, a state-listed threatened species. Darling pf. at 13; tr. 3/30/05 at 76 (Reynolds); tr. 3/30/05 at 190 (Darling).

225. Vermont bat species have low reproductive potential and generally produce one pup per year. Some of the migrant species may produce two pups per year. Darling pf. at 6; tr. 3/30/05 at 113 (Reynolds).

226. There is little information regarding the distribution, abundance, and stability of Vermont's bat populations, especially regarding the migrant species. Additionally, there is no information about the altitudes that bats migrate at, or the stop-over and foraging behavior of long-distance migratory bat species. Darling pf. at 6; tr. 3/30/05 at 91 (Reynolds).

227. Bat mortality rates associated with eastern forested high-elevation electric wind generation projects exceed mortality rates at northwestern and midwestern sites. Recent estimates of bat mortality for eastern forested high-elevation wind projects is 46.3 per turbine per

year. Estimates of bat mortality at northwestern and midwestern sites are 1.2 and 1.7 bats per turbine per year, respectively. Exh. ANR-Cross-6; tr. 3/30/05 at 106–107 (Reynolds).

228. It is expected that the relative abundance of migratory bats at East Mountain would be less than would be found at more southern sites. This is due to the northern latitude of East Mountain, rather than the elevation of East Mountain. Tr. 3/30/05 at 197 (Darling).

229. There is not a strong correlation between bat passage rates and mortality. Tr. 3/30/05 at 198 (Darling).

230. Species composition of the dead bats found at wind project sites is not evenly distributed. Long-distance migrants such as the red bat and hoary bat comprise a significant percentage of the mortalities. Darling pf. at 7–8; exhs. ANR-Cross-PK-2, ANR-Cross SR-4.

231. Acoustic and mist net studies on East Mountain resulted in a total of 22 bats (20 little brown bats and 2 long-eared bats) being captured in late August and September of 2004. Additionally, bats were observed foraging for food along Radar Road, at an elevation of approximately 2,900 feet, until early October. Kilpatrick pf. at 31–32.

232. The data compiled by the acoustic and mist net studies suggests that there are likely to be summer resident populations of little brown bats and long-eared bats on East Mountain. Darling pf. at 12.

233. The old growth forest on the slope of East Mountain is potential habitat for the silver-haired bat, whose population is declining nationwide. Tr. 4/8/05 at 25 (Kilpatrick).

Discussion

There is insufficient information to be able to make a positive finding on the potential impact of the proposed Project on bats. Bats appear to be especially vulnerable to adverse impacts from wind turbines given the results of bat mortality studies from high-elevation eastern forests which indicate that wind turbines can kill significant numbers of bats. The small number of offspring produced by bats suggests that large bat kills could have serious impacts on populations. There is a paucity of information regarding bat populations in Vermont generally. These facts, combined with the lack of adequate studies to determine information regarding resident bat populations near East Mountain and the number of migrating bats passing over East

Mountain, leads me to conclude that there is insufficient information to find that the proposed Project would not have an undue adverse impact on bats.

ANR has conceded that the proposed Project will probably not result in a large number of bat deaths, given that the Petitioner is seeking to construct only four turbines.⁶⁷ Nonetheless, I conclude that there is insufficient information in the record to enable the Board to make an affirmative finding on this issue.

ANR has recommended that, should the Board approve the proposed Project, a minimum of one fall season of preconstruction radar and acoustic monitoring be conducted at the site. Such a study would develop baseline data to characterize the potential risk of the proposed Project and would be needed to adequately assess post-construction impacts.⁶⁸

ANR has also recommended that if the Board does issue a CPG in this Docket, it should condition the CPG on EMDC conducting post-construction studies of bat mortality at the site. Such a study would need to take into account scavenger rates and searcher efficiency, especially given the thick forest surrounding the proposed Project site.⁶⁹ ANR requests that any such studies be a minimum of three years in duration and requests that the Board require that the methodology of post-construction studies be approved by the Vermont Fish and Wildlife Department.⁷⁰

Finally, ANR requests that EMDC be required to implement strategies to reduce bat collisions if Vermont Fish and Wildlife determines that the proposed Project is producing unacceptable levels of bat mortalities. Possible strategies include the possibility of shutting down the turbines during migratory periods and requiring compensatory mitigation.⁷¹

If the Board should determine that it can make a positive finding on this issue, and if the Board issues a CPG in this Docket, I recommend that it condition the CPG upon development, by EMDC, of one-year pre-construction radar and acoustic studies to determine baseline information, and three years of post-construction studies to address bat mortality. These plans

67. Darling pf. at 15.

68. ANR Brief at 15.

69. Tr. 3/30/05 at 193–194 (Darling).

70. ANR Brief at 15–16.

71. *Id.* at 16.

should be developed in conjunction with ANR and should be filed with the Board and parties for approval by the Board, in accordance with the post-certification review process described below. The Board should also explicitly leave open the possibility that, after receiving the results of post-construction bat mortality studies, any party could petition the Board to address whether the mortality resulting from the turbine operations would necessitate operational changes or other forms of mitigation.

Birds

234. There is insufficient information to determine whether the proposed Project would have an undue adverse impact on birds. This finding is supported by Findings 235 through 253, below.

235. The boreal forest of the Northeast Highlands is the only area in Vermont that supports a breeding population of the endangered spruce grouse. In addition, the boreal forest supports Bicknell's thrush, gray jay, black-backed woodpecker, palm warbler, Tennessee warbler, Cape May warbler, Wilson's warbler, and bay-breasted warbler. ANR considers these species rare or "species of conservation concern" due to their low population in Vermont. Austin pf. at 6–7.

236. In addition to the direct impact of turbine strikes, turbines have the potential to impact breeding populations in the following ways:

- loss of habitat, including breeding territories and nest sites;
- destruction of active nests during construction;
- disturbance resulting in failure or reduced productivity of nests;
- disturbance leading to displacement of breeding territories or home ranges; and
- disturbance causing altered movements or behavior patterns.

Rimmer pf. at 5.

237. Bicknell's thrush is a neotropical migrant that breeds in northern New England and Canada and winters in Hispaniola. Bicknell's thrush is listed as a species of special concern in Vermont, is considered the species of highest conservation concern in the northeast United States, and is listed as globally vulnerable by the International Union for Conservation of Nature. The worldwide population of Bicknell's thrush is thought to be in decline, primarily due to

deforestation of its winter habitat in Hispaniola. Rimmer pf. at 16; tr. 3/17/05 at 111 (Marshall); tr. 3/17/05 at 16 (Rimmer).

238. Bicknell's thrush prefers high-elevation montane spruce-fir forest habitat, such as is found on East Mountain. In Vermont, Bicknell's thrush is a habitat specialist typically found in regenerating fir, such as ski trails or chronically disturbed stands of fir. East Mountain is the largest unit of montane spruce-fir habitat in the Northeast Highlands and supports the region's largest breeding Bicknell's thrush population. The population of Bicknell's thrush at East Mountain serves as a source population for the region and may provide recruitment stock to other areas of Vermont. Rimmer pf. at 5–6, 12; exh. ANR-JA-4 at 4.

239. There have been documented declines and extirpations of Bicknell's thrush populations on several peaks in the Northeast Highlands. Rimmer pf. at 6; tr. 3/17/05 at 53–55 (Rimmer).

240. Studies of Bicknell's thrush populations near ski areas have indicated that populations near ski areas do not exhibit differences in nest success, breeding productivity, and adult survivorship. These studies have occurred where ski areas have been in place for forty years, and there is no baseline data to determine the populations of Bicknell's thrush before and after ski area development. Rimmer pf. at 15; tr. 3/17/05 at 19–20 (Rimmer).

241. Clearing for wind-turbine construction would likely result in the short-term destruction of some Bicknell's thrush habitat. If the proposed Project is approved, EMDC should avoid clearing of spruce-fir forest to the extent possible, including the lay-down areas and clearing along the road. Rimmer pf. at 8, 16.

242. Clearing of spruce-fir forest should not occur from May 15 to August 1 to minimize impacts to nests. Rimmer pf. at 18.

243. Mitigation measures for impacts to Bicknell's thrush habitat on East Mountain could include forest management to enhance Bicknell's thrush nesting habitat and protecting habitat in Hispaniola. Tr. 3/17/05 at 43–4 (Rimmer).

244. Migratory bird collisions have been reported at many wind generation facilities in the United States. Austin pf. at 11–12.

245. Habitat, topography, and elevation are relevant factors in assessing the risk that wind turbines pose to migrating birds. Tr. 3/15/05 at 52–53 (Kerlinger).

246. Mountain topography can concentrate some migrating birds along ridge tops. Austin pf. at 17.

247. The flight altitude of migrating birds can be influenced by weather, including wind, rain, fog, and cloud cover. Austin pf. at 18.

248. Wind generation projects in several states have conducted a variety of pre- and post-construction studies, including radar, acoustic, and thermal imaging, to characterize the risk that the specific project presents to birds. Maine's approval of a recent wind project at Mars Hill required pre- and post-construction bird migration studies. In approving the Hoosac Wind Farm, the Massachusetts siting authority noted that the petitioner in that case had agreed to pay for a portion of post-construction monitoring program. Projects in Washington, Oregon, Wisconsin, Minnesota, Colorado, Pennsylvania, and West Virginia, have conducted pre- and/or post-construction studies to determine the risk of the proposed project to migratory birds. Austin supp. pf. at 20–22.

249. However, there is a lack of information on migratory bird collisions for facilities with site characteristics similar to those of the proposed Project – i.e., high-elevation sites in the northeastern United States. Studies at new wind projects in Pennsylvania, Maine, Massachusetts and West Virginia may provide useful information, but those results are not yet available. Austin supp. pf. at 12.

250. One of the few studies of the avian impacts of wind turbines located in the northeastern United States was conducted at the Searsburg wind generation facility. However, the study had serious methodological flaws. Austin supp. pf. at 14–16.

251. Guidance documents from the United States Fish and Wildlife Service ("USFWS") recommend preconstruction avian radar studies. Austin supp. pf. at 23; exh. ANR-JA-2.

252. Turbine lighting has the potential for mitigating impacts to night-migrating songbirds. White strobe aviation hazard lighting with a three-second delay between flashes is recommended by USFWS to reduce the risk to night-migrating songbirds. Red strobe lights with a three-second delay would be suitable, if the white strobe lighting is not available. Incandescent lighting should be avoided. Permanent night lighting in the vicinity of the wind turbines would lead to a greater congregation of night migrants and an increased risk of bird mortality. Exh. JA-2.

253. The small number of turbines proposed for the site would probably limit the risk to migrating birds. Austin supp. pf. at 33.

Discussion

ANR has recommended that there be limited construction between May 15 and August 1 to limit the impact to nesting Bicknell's thrush. The specific circumstances on East Mountain, the fact that East Mountain contains a source population of Bicknell's thrush, and the presence of four nests within 100 meters of the proposed turbines lead me to recommend that the Board adopt ANR's recommendation if a CPG is issued.

EMDC contends that this requirement is not necessary to adequately protect Bicknell's thrush, noting that ANR's expert witness had not recommended curtailing construction of a communications tower on Mount Mansfield during the thrush's nesting season.⁷² However, there are significant differences between Mount Mansfield and East Mountain, with the primary difference being that no Bicknell's thrush were found within 100 meters of the proposed communications tower on Mount Mansfield.⁷³

If the Board issues a CPG, I recommend that the Board prohibit construction at the site between May 15 and August 1. However, I would also recommend that the Board provide EMDC an opportunity to request that this restriction be altered if a specific mitigation plan is developed. I make this latter recommendation in light of the fact that ANR was scheduled to study the presence of Bicknell's thrush on East Mountain during the 2005 nesting season.⁷⁴ If EMDC chooses to pursue this option, it should be required to work with ANR in developing a mitigation plan, file the plan with all the parties for comment, and obtain approval from the Board, pursuant to the post-certification requirements discussed below.

The Vermont Agency of Natural Resources and the USFWS have both requested that Petitioners conduct several years of studies to determine the risk to migratory birds. USFWS has stated that:

a three-year timeframe would provide an adequate sampling period to account for yearly and seasonal variability of bird, bat, insect, and other wildlife activity at the

72. Tr. 3/17/05 at 33–40 (Rimmer).

73. *Id.* at 33–40 (Rimmer).

74. *Id.* at 44–45 (Rimmer).

proposed EHWF site . . . The results of such studies would allow the project to be designed in such a way as to avoid or minimize wildlife impacts.⁷⁵

EMDC contends that such studies are not necessary, as studies of passage rates do not necessarily provide information regarding mortality rates from wind turbines. Additionally, EMDC contends that, due to the limited size of the proposed Project, any bird kills would likely be minimal. However, the record indicates that radar studies are a common tool to determine the risk that a proposed project poses to migratory birds. There is no reason that EMDC should not be required to undertake studies that are commonly conducted for proposed wind projects, especially given the lack of available data for comparable sites.

ANR recommends that the Board require EMDC to conduct one year of preconstruction radar studies to determine the potential risk of the proposed Project to migrating birds. USFWS has recommended three years of pre-construction studies. In addition, ANR has recommended that the Board require three years of post-construction studies to determine avian mortality due to the proposed wind turbines.

I recommend that, if the Board issues a CPG, the Board require EMDC to conduct one year of preconstruction avian radar studies at the site. In addition, Petitioners should be required to perform post-construction mortality studies at the site. These studies should be developed in coordination with ANR, with the study plan to be filed with all parties for comment and the Board for approval, in accordance with the post-certification review process described below.

In addition, I recommend that the Board explicitly leave open the possibility that, after receiving the results of post-construction bat mortality studies, any party could petition the Board to address whether the mortality resulting from the turbine operations would necessitate operational changes or other forms of mitigation.

75. Exh. ANR-JA-4 at 3.

(19) Public Investments

[10 V.S.A. § 6086(a)(9)(K)]

Findings

254. The proposed Project will materially jeopardize or interfere with the function of the public investment in the former Champion Lands and with the public's use and enjoyment of those lands. This finding is supported by Findings 255 through 265, below.

255. Over \$44 million in public funds have been invested in the Northeast Kingdom for purposes of conserving lands, either through ownership or easement. These lands total more than 384 square miles in area. Decker pf. at 3–4; exh. ANR-TD-2.

256. Among these conserved lands are the Champion Lands. The Champion Lands, comprising approximately 132,800 acres, surround the seventeen-acre site of the proposed Project. Decker pf. at 8 – 9; exh. ANR-TD-2; tr. 4/1/05 at 71–72 (Boyle); finding 10, above.

257. Over 9,000 acres of the Champion Lands are above 2,500 feet in elevation, which represents the vast majority of high elevation lands in the region. Decker pf. at 4.

258. On October 8, 1997, the Champion Paper Company announced its intention to sell its lands in northeastern Vermont. Exh. KCG-WJ-22 at III-1.

259. An effort to conserve the Champion Lands ensued to preserve forever the remote and undeveloped nature of the Champion Lands. This effort represented an unusually complicated land deal, involving many entities, including: The Conservation Fund ("TCF") of Arlington, Virginia; USFWS; ANR; VHCB; VLT; the Vermont Chapter of the Nature Conservancy; and the Essex Timber Company. Decker pf. at 9; exh. KCG-WJ-22 at III-1.

260. Through this effort, the Champion Lands were eventually acquired, with ownership of the lands shared by certain of the involved entities. The Essex Timber Company acquired approximately two-thirds of the Champion Lands, 84,000 acres. The State of Vermont purchased 22,500 acres (approximately one-sixth of the Champion Lands). These 22,500 acres now comprise the West Mountain Wildlife Management Area. The State of Vermont acquired the 22,500 acres and easements on the Essex Timber Company's 84,000 acres for a total cost of \$9 million, comprised of \$4.5 million of state funds and a matching \$4.5 million grant from the Richard King Mellon Foundation. The federal government spent \$6.5 million for 26,300 acres

(the remaining sixth), located in the Nulhegan Basin; these lands are now the Nulhegan Basin Division of the Silvio Conte National Wildlife Refuge ("Nulhegan Refuge"). Decker pf. at 9–10; exh. KCG-WJ-22 at III-3 to III-5.

261. Included among the locations from which the proposed Project would be seen are areas within the Champion Lands. For example, the Project would feature prominently in views along an existing, drivable trail that leads to the East Mountain Old Growth Area. The Long Term Access Plan identifies this trail as a future hiking trail. People hiking along the trail would view the proposed turbines for an extended period of time. Jewell pf. at 10–12; exhs. KCG-WJ-8 and KCG-WJ-9.

262. Another area within the Champion Lands from which the proposed Project would be highly visible is the Madison Brook Bowl. There are several large clearings within the area that would allow views of the Project. A person walking along one of the designated hiking trails within the Madison Brook area would have a clear view of the turbines. Exh. DPS-1 at 7; exh. DPS-5; exhs. KCG-WJ-12 and KCG-WJ-13; Jewell pf. at 12.

263. The industrial and highly visible nature of the proposed 329-foot tall wind turbines would detract significantly from the recreational experience and, more generally, would be fundamentally incompatible with the remote, rugged, undeveloped nature of the conserved lands that surround the project site. Decker pf. at 16–20; Jewell pf. at 12; Findings 52 – 63 and 165, above.

264. Maidstone Lake State Park lies six to seven miles east of the proposed Project site. The park is visited by an estimated 16,000 visitors each year. Exh. DPS-1 at 6, 12; exh. DPS-3.

265. The proposed Project would not have an undue adverse impact on the Old-Growth Area, Maidstone Lake State Park, Victory Bog, or Darling State Park. Findings 151 – 154 and 166 – 170, above.

Discussion

Criterion 9(K) of Act 250 provides that:

A permit will be granted for the development or subdivision of lands adjacent to governmental and public utility facilities, services and lands, including, but not limited to, highways, airports, waste disposal facilities, office and maintenance buildings, fire and police stations, universities, schools, hospitals, prisons, jails, electric generating and transmission facilities, oil and gas pipe lines, parks, hiking

trails and forest and game lands, when it is demonstrated that, in addition to all other applicable criteria, the development or subdivision will not unnecessarily or unreasonably endanger the public or quasi-public investment in the facility, service, or lands, or materially jeopardize or interfere with the function, efficiency, or safety of, the public's use or enjoyment of or access to the facility, service, or lands.

EMDC argues that only that portion of the Champion Lands that "immediately abut" the project site should be considered "adjacent" for purposes of the Criterion 9(K) analysis.⁷⁶ This would be an unreasonably narrow interpretation of the word "adjacent," especially in light of the Board's precedent in Docket No. 6860. In Docket No. 6860, the Board adopted the Environmental Board's interpretation of the word "adjacent" as "a relative term that must be considered in the context of the scale of a project."⁷⁷ Accordingly, in its review of a proposed, significant transmission project (the "Northwest Reliability Project"), the Public Service Board's analysis under Criterion 9(K) considered that project's impacts on public investments "on lands physically adjacent to the proposed Project and to lands where the proposed Project has an adverse aesthetic impact."⁷⁸

In the instant case, with four 329-foot-tall wind turbines to be sited atop the highest peak in the vicinity, the proposed Project would have adverse aesthetic impacts on public lands far beyond those that "immediately abut" the 17-acre EMDC property. Therefore, based on the Board's precedent from Docket No. 6860 and the related Environmental Board precedent, I conclude that the analysis under Criterion 9(K) should consider the proposed Project's impacts on public and quasi-public investments with respect to all lands where the Project would materially interfere with the function or the public's use and enjoyment of those investments.

Having determined that the 9(K) analysis in this Docket should extend to those public lands affected by the proposed wind turbines, I next address the appropriate test to use in conducting that analysis. The Public Service Board's analytical approach for determining a

76. EMDC Proposed Findings and Conclusions of Law at 121.

77. Docket No. 6860, Order of 1/28/05 at 164, quoting *Re: L & S Associates*, No. 2W0434-8-EB at 37 (Environmental Board, September 22, 1993).

78. Docket No. 6860, Order of 1/28/05 at 164.

project's impacts under Criterion 9(K) similarly borrows heavily from the Environmental Board, which:

interprets Criterion 9(K) to call for two separate inquiries with respect to public facilities. First, the Board is to examine whether a proposed project will unnecessarily or unreasonably endanger the public investment in such facilities. Second, the Board is to examine whether a proposed project will materially jeopardize or interfere with (a) the function, efficiency or safety of such facilities, or (b) the public's use or enjoyment of or access to such facilities.⁷⁹

Applying the first of these two steps to EMDC's proposed Project, the only potential endangerment of the public investment would appear to be that related to ice throw. For the reasons stated in Section II.F.15, above, I conclude that the proposed Project would not unnecessarily or unreasonably endanger the public or quasi-public investment in the surrounding lands.⁸⁰

Under the second step of the analysis, Environmental Board precedent provides useful guidance. As noted earlier, in the 1986 *Percy* decision the Environmental Board reviewed a proposed commercial gravel pit that would be located adjacent to the Putnam State Forest, which includes the Moss Glen Falls Natural Area. The Environmental Board found that "the Moss Glen area is a naturally and aesthetically beautiful valley which is relatively untouched by the hand of man."⁸¹ The Environmental Board further concluded that the project would be "wholly out of context with its surroundings," and would significantly alter the experience of visitors to the Moss Glen Falls. For these reasons, the Environmental Board concluded that "operation of the pit will materially jeopardize and interfere with the public's use, enjoyment, and access to the Moss Glen Falls Natural Area," and thus failed to comply with 10 V.S.A. § 6086(a)(9)(K).⁸²

Turning to the project at issue in the current Docket, I conclude that the proposed Project will materially jeopardize or interfere with the function of the public investment in the former Champion Lands and with the public's use and enjoyment of those lands. Many millions of

79. Docket No. 6860, Order of 1/28/05 at 165, quoting *Swain Development Corporation*, No. 3W0445-2-EB at 33 (Environmental Board, August 10, 1990).

80. This conclusion is dependent upon EMDC developing an effective protocol for avoiding any ice throw onto the East Mountain Old Growth Area.

81. *Percy* at 13.

82. *Id.* at 14, 16, 21–23.

dollars, along with substantial time and effort, have been devoted to a concerted campaign to preserve the remote, rugged, undeveloped nature of the 132,800-acre Champion Lands that surround the project site. As would be expected, visitors come to the Champion Lands to experience the remote, undeveloped nature of the surroundings. Placing 329-foot tall wind turbines at the highest point in the area, which is also at the center of the Champion Lands, would be so out of character with the remote wilderness experience as to be shocking and offensive to members of the public engaged in hiking and other recreational activities on the Champion Lands, thereby materially jeopardizing or interfering with the public's use or enjoyment of the public investment in those lands, and with the function of that public investment.

As for the other public investments that may be impacted by the proposed Project, I reach a different conclusion. Because the project would be much farther from Maidstone Lake State Park, Darling State Park, and Victory Bog than it would be from the Champion Lands, the visual impacts from those public lands would be greatly attenuated. Thus, I conclude that the proposed Project would not endanger the public investment in those lands, nor would it materially jeopardize or interfere with the public's use or enjoyment of those lands.

G. 30 V.S.A. § 248(b)(6) – Least-Cost Integrated Plan

Finding

266. EMDC is not required to prepare a least-cost integrated resource plan, so this criterion is inapplicable. *Ide pf.* at 16.

Discussion

EMDC is not required to prepare a least-cost integrated resource plan.⁸³ Accordingly, this criterion does not apply to the proposed Project.⁸⁴

83. *See* 30 V.S.A. § 218c(a).

84. *See* Docket No. 6812, Order of 4/8/04 at 103.

H. 30 V.S.A. § 248(b)(7) – Compliance with Department's Electrical Energy Plan**Findings**

267. The proposed Project is in compliance with the electrical energy plan approved by the Department under Section 202 of Title 30. Findings IIIH to IIH, below.

268. On December 13, 2004, the Department issued a determination under 30 V.S.A. § 202(f) finding that the proposed Project is consistent with the Department's Twenty-Year Electric Plan. Lamont pf. at 4.

269. The Twenty-Year Plan acknowledges the benefits and desirability of renewable generation sources, including long-term benefits. Lamont pf. at 4.

I. 30 V.S.A. § 248(b)(8) – Outstanding Resource Waters

270. There are no Outstanding Resource Waters at or adjacent to the project site. Rubin pf. at 32.

J. 30 V.S.A. § 248(b)(9) – Waste-to-Energy Facility

The proposed Project is not a waste-to-energy facility. Therefore, this criterion does not apply.

K. 30 V.S.A. § 248(b)(10) – Existing or Planned Transmission Facilities**Findings**

271. The proposed Project can be served economically by existing or planned transmission facilities without undue adverse effect on Vermont utilities or customers. This finding is supported by Findings 72 through 82, above, and Findings 272 through 275, below.

272. The proposed Project cannot be interconnected to the existing LED distribution system due to the Project's generation output and the distance between the Project and LED's existing 34.5 kV system. Interconnecting with LED's existing distribution system would adversely affect voltage regulation for LED's 12.5 kV customers to an unacceptable degree, and would create issues with short circuit protection. Rice pf. (4/14/05) at 4–5.

273. As part of the proposed Project in Docket 6911, EMDC plans to construct approximately 7.6 miles of 34.5 kV transmission line from the wind farm to the terminus of LED's distribution system on Radar Road in East Haven, Vermont. The subject of Docket 7067 is LED's plan to construct the remaining 6.3 miles of 34.5 kV transmission line to connect the EMDC 34.5 kV line, which would terminate at Radar Road, to LED's Burke Mountain substation in East Burke, Vermont. Exh. LED Rice-2 at 3–4.

274. The proposed transmission upgrades are an efficient method of connecting the windfarm to the electrical system. Rice pf. (3/10/05) at 6–7.

275. EMDC and LED have agreed to a cost-sharing arrangement, under which EMDC will: (i) pay for the design, permitting and construction of the transmission line conveying power to the Burke Mountain substation, for which LED will secure permits; and (ii) pay on-going maintenance costs associated with the transmission line. With adherence to the conditions recommended above with respect to Criterion (b)(3), and because EMDC will bear all the costs of the transmission upgrades in order to connect to the transmission facilities, there will be no undue adverse effect on Vermont's utilities or customers. Rubin pf. at 55; Mason pf. at 8; Litkovitz pf. at 4-5; Jockell pf. at 6-7.

L. Coordination with Board Order in Docket No. 7067

In Docket No. 7067, the Board is reviewing LED's proposal to construct 6.3 miles of 34.5 kV transmission line that is needed for the proposed Project to interconnect with LED's system, at LED's Burke Mountain substation. If the Board decides to issue a CPG to EMDC in the current Docket, I recommend that it include a condition prohibiting the commencement of site preparation or construction unless and until a Certificate of Public Good is issued in Docket No. 7067. To do otherwise would allow construction activities with attendant environmental impacts, without any certainty that the proposed Project would actually become operational and deliver power to the electric grid.

M. Decommissioning Fund

Findings

276. A fully funded decommissioning fund should be in place prior to any significant construction activity at the project site. The purpose of the fund would be to return the site to a more natural condition at the conclusion of the proposed Project's useful life. *Ide* pf. at 17.

277. EMDC estimates that decommissioning the project would cost approximately \$400,000 in 2005 dollars. If adjusted for projected inflation, the figure rises to \$706,000 in the year 2028. *Rubin* pf. reb. at 2; exh. EHWF-MR-Reb2.

278. The decommissioning fund should contain sufficient funds to pay the full estimated costs of decommissioning. EMDC has yet to provide a sufficiently detailed estimate of the full costs of decommissioning. *Tr.* 4/7/05 at 228 (*Ide*).

279. An appropriate triggering mechanism would need to be established for the decommissioning fund. The trigger could be based on the production level of the project, with the Petitioner required to file periodic reports that track the ongoing production levels. *Tr.* 4/7/05 at 231 (*Ide*).

280. The amount of the decommissioning fund should not be reduced by the projected value of scrap or spare parts, because to do so would expose taxpayers to the risk of changes in those values. *Tr.* 4/7/05 at 228 (*Ide*).

281. EMDC is a limited liability company. The decommissioning fund should be established in such a manner as to be bankruptcy remote, to protect the fund against creditor claims in the event the proposed Project encounters financial difficulty. Finding 1, above; *tr.* 4/7/05 at 232 (*Ide*).

Discussion

If the Board issues a CPG for the proposed Project, I recommend that the Board include conditions requiring that EMDC, prior to undertaking any substantial construction activities⁸⁵ at the project site, establish a decommissioning fund. All parties, including EMDC, agree that it is

85. "Substantial construction activities" would include any activities that require the use of mechanized construction equipment.

appropriate for the Board to require a decommissioning fund if it approves the proposed Project. However, the parties disagree regarding certain of the details of a decommissioning fund.

One of the disagreements centers on the scope of decommissioning activities that should be required. EMDC proposes that the decommissioning activities only include:

taking down, or de-erecting, all wind turbines, towers, and pad mounted transformers, which may be stored on site after being taken down. All other structures and equipment, including but not limited to power lines, buildings, foundations and roads, are excluded.⁸⁶

The Department argues that the storage of the dismantled components may require Act 250 approval, and that EMDC may be unable to obtain that approval. The Department contends that under those circumstances, EMDC's proposal would not provide adequate funds to decommission the project in accordance with state law.⁸⁷ Mr. Day asserts that decommissioning "should include removing from the site all turbines, towers, equipment, and transmission lines."⁸⁸

I recommend that the Board accept the Department's recommendation, and require a decommissioning fund sufficient to dismantle and remove all project components, including but not limited to the towers, nacelles, rotor blades, transformers, all associated structures and equipment; however, the foundations, roads, and the transmission line could remain in place.⁸⁹ The Department also proposes that the decommissioning fund be established not only to cover the dismantling of the proposed Project, but also to ensure that construction-related conditions are satisfied if construction commences but is not completed.⁹⁰ This is an appropriate requirement, and I recommend that the Board adopt it in the event it issues a Certificate of Public Good. The fund should be available to ensure compliance with all conditions that the Board imposes under Section 248(b)(5), including ongoing compliance with any conditions designed

86. EMDC Proposed Findings and Conclusions of Law at 13.

87. Department Reply Brief at 2-3.

88. Jon Day Reply Brief at 12.

89. Although the Department and Mr. Day recommend that the transmission line be removed as part of decommissioning the project, I conclude that the line could remain, given that there is an existing line and that the new line is not much larger physically than the existing line that it would replace.

90. The Department provides the following example. If construction commences and the existing structures are removed, but the project is not finished, then "the decommissioning fund should be available to complete the proper memorialization of the historic nature of the site, however that is ultimately defined in the CPG." DPS Brief at 66.

for long-term mitigation of impacts that would continue after decommissioning of the wind turbines.⁹¹

The parties also disagree on whether the amount of the decommissioning fund should be reduced by the estimated salvage value of project components. I recommend that the amount of the fund should be the full estimated costs of decommissioning, without any reduction for the projected scrap or parts value. Such a reduction would inappropriately place on taxpayers the risk of that projected value not being realized. Furthermore, as the Department notes, the project components might be attached by creditors, and would become part of the bankruptcy estate in the event of a bankruptcy filing.⁹² Thus, those assets may not be available to offset decommissioning costs, if the project should fail financially.⁹³

Finally, the decommission fund must include an appropriate mechanism that would trigger it. EMDC proposes that if "the wind farm delivers less than ten thousand (10,000) MWh in any given year, based on a three year rolling average, the DPS may petition the PSB, or the PSB can on its own motion hold a hearing on decommissioning the project."⁹⁴ The Department proposes that, instead, the proposed Project be required "to maintain, over any 12-month period, a production level equal to at least 50% of the previous three-year rolling average to avoid decommissioning."⁹⁵ Mr. Day recommends that a higher level of production — such as 17,000 MWh annually — be required, such that the project would be decommissioned if it failed to achieve that output (or ninety percent of that level) for two consecutive years.⁹⁶

It is difficult to set a precise production level that should trigger future decommissioning, without knowing the circumstances that would be present (such as the price and availability of replacement power, and potential impacts on the stability and reliability of the system at that

91. One possible such condition might be the installation and maintenance of historic site markers.

92. Department Brief at 67.

93. EMDC argues that if the towers and turbines have value and become part of the bankruptcy estate, they would be taken from the site, thereby accomplishing the purpose of decommissioning. EMDC Reply Brief at 64. While this may be correct, presumably any party who purchases the assets through a bankruptcy proceeding would only do so if there would be a net positive value, after costs of dismantling and removal. Therefore, under this bankruptcy scenario, it would appear that the full salvage value would not be applied toward decommissioning activities.

94. EMDC Proposed Findings of Fact and Conclusions of Law at 15.

95. Department Brief at 67.

96. Jon Day Brief at 22; Jon Day Reply Brief at 12.

future time). However, given that many of the benefits of the proposed Project would be directly proportional to its power production, I recommend that the Board set a moderately high production level that would trigger the possibility, but not the certainty, of decommissioning, with the decision of whether to require actual decommissioning to be based on the relevant facts at that time. If the proposed Project did not achieve that production level, EMDC would be required to demonstrate why the project should not be decommissioned. I propose that this threshold production level be 14,000 MWh annually, which represents approximately two-thirds of EMDC's own projection of the project's net output,⁹⁷ with the decommissioning review being triggered if the proposed Project produces less than the threshold level for any two consecutive years.

Given the many other details that would need to be included in a decommissioning provision, I recommend that the Board, if it issues a CPG, address those details as part of the post-certification review process. The proposed condition that EMDC included in its initial brief⁹⁸ should provide a useful starting point for crafting an appropriate condition.

N. Certificate of Public Good under 30 V.S.A. § 231; Board Rule 4.106

Findings

282. On February 10, 2004, EMDC obtained status under federal law (the Public Utility Regulatory Policy Act of 1978) as a Qualifying Facility. EMDC obtained this status through the self-certification process pursuant to Federal Energy Regulatory Commission regulations. Rubin supp. pf. at 1; exh. EHWF-MR-Supp-1.

283. The proposed Project would produce electric energy for sale to load-serving utilities solely by the use of a renewable resource. Rubin supp. pf. at 1.

284. EMDC would sell the output from the proposed Project only at wholesale. None of the energy would be sold directly to consumers for their use. Rubin supp. pf. at 1–2.

97. EMDC projects the net output to be 20,953 MWh per year (EMDC Proposed Findings of Fact and Conclusions of Law at 21), two-thirds of which would be 13,969 MWh.

98. EMDC Proposed Findings and Conclusion of Law at 13–15.

285. The Project would be constructed to meet or exceed the interconnection standards established under Board Rule 4.106. Rice pf. at 6; exh. LED-Rice-2 (Docket No. 7067) at 3.

Discussion

EMDC originally requested that the Board issue a CPG under 30 V.S.A. § 231. As noted in the Procedural History, above, I allowed EMDC to amend its petition to withdraw this request. EMDC contends that it need not obtain such certification, citing Board Rules 4.102(A) and 4.109.⁹⁹

Board Rule 4.109 provides that qualifying facilities that fall under the scope of Rule 4.100 "and which sell electricity only at wholesale shall be exempt from all regulation under Title 30 except under 30 V.S.A. §§ 202, 209(a)(8), 214 and 248." Rule 4.102(A) provides that Rule 4.100 "applies to Vermont electric utilities and to those qualifying facilities that fall within the definitions contained in 30 V.S.A. § 209(a)(8) or 18 C.F.R. §§ 292.201–207." EMDC has obtained certification as a Qualifying Facility under 18 C.F.R. § 292.207(a)(1).¹⁰⁰

Because EMDC will sell electricity only at wholesale, and because it has obtained Qualifying Facility status under the applicable C.F.R. provisions, I conclude that the proposed Project is exempt from the otherwise applicable requirements of 30 V.S.A. § 231.¹⁰¹

O. Concerns of the Public

The Board has received hundreds of comments upon the proposed Project in the form of oral comments at the public hearing, written comments, and e-mails. Under Vermont law, the Board's decision must be based upon the evidence presented by formal parties during the evidentiary hearings. However, public comments play an important role by raising new issues or offering perspectives that it should consider. Although it is not possible to address each individual concern, the comments largely fall into two categories:

99. EMDC Motion to Amend Petition, December 16, 2004.

100. Exh. EHWF-MR-Supp-1.

101. The proposed Project also appears to fall within the definitions contained in 30 V.S.A. § 209(a)(8), and for that additional reason would be exempt from the requirements of Section 231.

- Aesthetics: Commenters recommended that the Board deny the proposed Project due to its aesthetic impact, and argued that Vermont's ridgelines should not be degraded by windfarm development.
- Support for renewable energy: Commenters recommended that the Board approve the proposed Project as a clean, local power source that is needed in Vermont, and that would have fewer adverse environmental impacts than other power supply alternatives.

These issues have been addressed throughout in this Proposal for Decision. Indeed, as noted earlier, the proposed Project starkly presents a conflict between the state's policies favoring renewable energy and disfavoring ridgeline development, and this Proposal for Decision has attempted to strike the proper balance between them based on the specific facts of this case.

P. Post-Certification Review Process

KCG contends that the Board cannot issue a CPG in this Docket because EMDC has not received all necessary permits. KCG relies upon three sources for this statement: Environmental Board precedent; the Vermont Administrative Procedures Act; and Public Service Board precedent.

This issue has been raised previously in this Docket and was addressed in an Order dated May 18, 2005. In response to a motion for summary judgment from KCG, based in part on the contention that EMDC cannot be allowed to rely on future review of permits, I stated: "Board precedent in Section 248 proceedings has allowed applicants to rely on subsequent approvals by other agencies, if . . . all parties are provided an opportunity to respond." This statement was supported by the following quote from a prior Section 248 case:

[T]o the extent the applicant relies upon permits issued by other agencies or outside studies to form the evidentiary basis for its petition (in effect relying upon them as a rebuttable presumption), the Board cannot issue a certificate until those documents are submitted and other parties have had an opportunity to rebut them. In some cases, this may require further evidentiary hearings, which could have the effect of delaying a project. An applicant that chooses to rely upon such permits (rather than presenting direct evidence) must bear this risk.¹⁰²

102. Docket 6792, Order of 7/17/03 at 37.

If the Board issues a CPG for the proposed Project, EMDC must obtain certain permits from other state agencies, including ANR. Any such permits received should be filed with the Board and the parties, with the parties having an opportunity to respond to these filings. In addition to these permits, I have also recommended that the Board, if it issues a CPG, include a number of conditions that would require additional compliance filings of EMDC. Here, too, the other parties should be given an opportunity to comment on EMDC's post-certification filings. These procedures would ensure that parties have the opportunity to be heard on all issues relevant to the Board's approval of the proposed Project.

If the Board issues a CPG in this Docket, EMDC should be required to submit a proposed schedule that lists all of the plans, permits, and reports required by the Board, and the proposed date on which EMDC will file these with the Board and parties. The process for reviewing the necessary plans, permits, and reports should be as described below.

EMDC would be required to file all plans, permits, and reports with the parties at least two weeks prior to filing with the Board. All parties would be required to make a good-faith effort, during this two-week period, to resolve any differences that might arise from the plans, permits, and reports. After this two-week period has run, EMDC would file the plan, permit, or report with the Board and parties. The Board would then provide a two-week period to receive comments on the filings. Any party who believes that the filings raise a significant issue that should be addressed through evidentiary hearings could request a hearing on that issue.

III. CONCLUSION

For the reasons set forth above, I conclude that the proposed Project will not promote the general good of the state. Therefore, I recommend that the Board not issue a Certificate of Public Good for the proposed Project. However, if the Board does issue a CPG, I recommend that it include the conditions outlined in this Proposal for Decision.

This Proposal for Decision has been served on all parties to this proceeding in accordance with 3 V.S.A. § 811.

Dated at Montpelier, Vermont, this 28th day of March, 2006.

s/Kurt Janson

Kurt Janson, Esq.
Hearing Officer

IV. BOARD DISCUSSION

Introduction

In his Proposal for Decision ("PFD"), the Hearing Officer has recommended that we deny a certificate of public good ("CPG") to EMDC's proposed 6 MW wind generation facility on East Mountain in East Haven, Vermont. The Hearing Officer recommends that we find that the proposed Project would have an undue impact on the public investment in the surrounding, former Champion Lands. He further recommends that we find that EMDC has not sufficiently addressed the potential impacts of the proposed wind turbines on birds and bats.

Many of the parties to this proceeding filed comments on the Hearing Officer's Proposal for Decision. We summarize those comments below. We have thoroughly reviewed the parties' comments, the Hearing Officer's recommendations, and the record evidence. We heard oral argument from the parties on May 4, 2006, and have also conducted our own site visit with the parties, on June 22, 2006.¹⁰³ We have determined, after careful deliberation, to affirm in part and modify in part the Hearing Officer's proposed decision, as more fully explained below.

In summary, we concur with the Hearing Officer's conclusion that EMDC has failed to provide sufficient evidence concerning the impacts of the proposed Project on bats and birds – in particular, EMDC failed to conduct studies necessary to assess those potential impacts. We are thus unable to make a finding, under 30 V.S.A. § 248(b)(5), that the project would not have an undue impact on wildlife, and accordingly we accept the Hearing Officer's ultimate recommendation that we not issue a certificate of public good in this proceeding.

We do not, however, adopt the Hearing Officer's conclusion with respect to the proposed Project's impacts on public investments, nor his related conclusions regarding aesthetics and the orderly development of the region. On these issues, the Hearing Officer found that the proposed Project would be so inconsistent with the public investment in the surrounding conserved lands as to have unacceptable impacts on that investment, on aesthetics, and on the orderly development of the region. While we have little quarrel with the bulk of the Hearing Officer's

103. As noted in the Procedural History, above, the Hearing Officer had previously conducted two site visits with the parties.

findings with respect to the public investment and the project's potential impacts on that investment, our review of the record leads us to conclude that the benefits of this renewable energy project are somewhat greater, and its impacts on the public investment less, than the Hearing Officer determined. Accordingly, when we balance those benefits and impacts, we conclude that the benefits are sufficient to outweigh the impacts on the public investment in the former Champion Lands.

On all other issues we adopt the Hearing Officer's findings and conclusions.

Before turning to the specific issues raised by the parties' comments, we wish to address concerns that have been raised that denial of this four-turbine project would send a signal that no wind project could be sited in Vermont. The Hearing Officer's Proposal for Decision is clearly, and appropriately, based on the specific facts presented by EMDC's proposed project; a Section 248 review is by its very nature project- and site-specific. While we have not accepted in their entirety the Hearing Officer's recommended conclusions, it is clear that the recommendations are based on the Hearing Officer's detailed consideration of the record evidence – and lack thereof – regarding the potential impacts of these proposed wind turbines in this particular location. Neither the Hearing Officer's recommendations, nor our own ultimate decision, should be read as a rejection of the possibility of siting wind turbines on any Vermont ridgeline. Indeed, in the context of this particular proposed wind generation project, both the Hearing Officer and this Board have acknowledged the many and substantial benefits of wind generation, and have rejected many of the objections that have been raised against wind turbines. Here, however, because EMDC did not conduct the studies necessary to assess the proposed Project's potential impacts on birds and bats, we cannot issue a CPG for this project.

Parties' Comments on the Proposal for Decision

EMDC

EMDC contends that the PFD erroneously concludes that the proposed project would have undue impacts on the orderly development of the region, aesthetics, wildlife, and public investments. EMDC asserts:

As the first commercial wind energy project to come before the Board since the Searsburg wind farm, the decision it reaches on this petition will send a strong

signal to renewable energy developers – and to all Vermonters – about the prospects for diversifying our energy portfolio to include these clean, safe and stably priced energy resources.¹⁰⁴

With respects to the impacts of the proposed Project on aesthetics, EMDC asserts that the project will not unreasonably or unduly interfere with the experience of users of the working forest lands surrounding the project site, because (a) the Champion Lands are not wilderness, (b) the PFD overstates the visibility and impact on the Champion Lands, (c) the project would be seen by few visitors to the Champion Lands and would not shock and offend them, and (d) the PFD misapplies Quechee's mitigation test.

EMDC further contends that, due to its minimal aesthetic impact, the project will not unreasonably or unnecessarily endanger the public investment or materially jeopardize the public's use or enjoyment of the Champion Lands. According to EMDC, the PFD overstates the public investment that would be affected by the project; EMDC presents a mathematical calculation that attempts to apportion the public investment, and concludes that the state spent \$720,000 to protect those portions of the Champion Lands that lie within four miles of the project. EMDC also argues that the facts in the *Percy* case, upon which the PFD relies, differed greatly from those of the present case.

EMDC asserts that the PFD's conclusion that the project will unduly interfere with the orderly development of the region is based on erroneous conclusions regarding aesthetics and public investments. EMDC claims that the PFD wrongly elevates the easements on the Champion Lands "to the status of public planning documents,"¹⁰⁵ and overstates the restrictiveness of the Regional Plan.

EMDC contends that the project poses a low risk to birds and bats, for the following reasons: the project is small in size; very few birds are killed by windfarms; birds fly in a broad migration pattern and thus are unlikely to concentrate above the project site; bird passage rates at similar sites have been low; the project lacks the risk factors that have been associated with high bird fatalities at wind and telecommunications towers; and there are relatively few bats at the site due to its elevation and its location at the edge of the range for some species.

104. EMDC Comments at 3.

105. EMDC Comments at 16.

EMDC argues that radar studies are not needed, and should not even be required as a CPG condition. EMDC claims that the proposed CPG condition allowing any party to seek changes to the project based on post-construction bat mortality could prevent the project from being constructed. EMDC also contends that the PFD's seasonal restrictions on construction to protect Bicknell's Thrush offer only marginal benefits for that species while increasing costs and delaying the benefits of this renewable-energy project.

EMDC asserts that the PFD establishes an excessively high decommissioning fund, and is overly burdensome, in requiring complete removal of project components and in not recognizing the residual value of the turbines.

EMDC states that "[a]ccording to the PFD, the *single* effect of the EHWF Project, upon which each of the conclusions of undue adverse impact were based, is that the turbines will be visible from relatively nearby locations within the surrounding working forest land."¹⁰⁶ EMDC claims that the many benefits of this renewable energy project outweigh this impact. EMDC also asserts that in balancing the impacts and benefits, the Board should consider the potential of a CPG denial to discourage other wind development in Vermont.

Department of Public Service

The Department contends that the PFD reaches the wrong conclusions on orderly development of the region, aesthetics, and impacts on public investment.¹⁰⁷

The Department contends that "[t]he Project will not unduly interfere with the orderly development of the region because it will not create any direct interference with the dominant land uses in the lands surrounding the Project site."¹⁰⁸ Those dominant land uses are, according to the Department, timber harvesting and recreational activities. The Department notes that the Project site has been previously developed, and that the proposed wind generation facility, "while a significant change in use, will not physically encroach beyond the existing impacted area in a

106. EMDC Comments at 35 (emphasis in original).

107. The Department's comments do not address the PFD's findings and conclusion that the Petitioner has failed to demonstrate that the project would not have an undue adverse impact on bats and birds. Nor does the Department take a position on whether the Board should issue a CPG.

108. Department Comments at 1–2.

manner that would directly prohibit or interfere with the dominant land uses."¹⁰⁹ The Department contends that the Regional Plan does not support a conclusion of undue interference with the orderly development of the region. The Department also asserts that the PFD fails to recognize that the Champion Lands "are already subject to certain activities that impact the experience of a user of these lands," including commercial forestry and snowmobiling.¹¹⁰

The Department contends that the Hearing Officer was incorrect in his conclusions that the Proposed Project would be shocking and offensive to the average person viewing the project from the Champion Lands. According to the Department, in light of the difficulty in accessing the viewing locations within the Champion Lands, the PFD's conclusion inappropriately relies on the perceptions of an outdoor enthusiast, not those of an average person.

The Department claims that the *Percy* decision differs significantly from the current project in that there was no existing commercial activity in *Percy*.

The Department also asserts that EMDC has taken all reasonable and generally available mitigating steps, given that the project site is previously developed and has limited visibility.

The Department claims that the Project would not materially interfere with the public investment in the Champion Lands. The Department asserts that the impacts of the Project on the Champion Lands are limited to sporadic visual impacts, which "do not rise to the level of materiality."¹¹¹ As in its comments with respect to aesthetics, the Department claims that the current proposal is significantly different than that in *Percy*, given that in the Champion Lands there is already the periodic commercial extraction and transport of a natural resource.

Agency of Natural Resources

ANR ". . . supports the hearing officer's conclusions regarding potential impacts to wildlife under 10 V.S.A. § 6086(a)(8)(A). In the event the Board issues a Certificate of Public

109. Department Comments at 2.

110. Department Comments at 4–5.

111. DPS Comments at 11.

Good, the Agency respectfully requests that the Board adopt the conditions proposed by the Hearing Officer."¹¹²

Kingdom Commons Group

KCG supports the PFD's conclusions on 248(b)(1) and part of 248(b)(5) (specifically, the Act 250 criteria 8, 8 (A), and 9(K)). KCG asserts that there are additional bases for denial of a CPG: EMDC's failure to provide sufficient information on the project's impacts; the project's non-compliance with the clear aesthetic standards in the Regional Plan; the uncontroverted testimony of Kilpatrick regarding impacts on the yellow-nosed vole; and EMDC's failure to demonstrate compliance with 248(b)(2) and (b)(4).

KCG contends that on many issues, EMDC has failed to provide sufficient evidence to satisfy its burden of proof, and improperly relies on the use of post-certification filings to provide much of this missing information.

KCG asserts that the Regional Plan includes "specific unambiguous language which is clearly intended to preserve the scenic, natural beauty of the area."¹¹³ KCG claims that the proposed project clearly violates these standards.

The yellow-nosed vole is a rare species, having been found at only eight other locations in Vermont over the past 100 years. KCG argues that clearing activities associated with construction of the proposed project will (1) change the hydrology of the area, drying the moist talus slopes which are important habitat for the yellow-nosed vole, and (2) result in expansion of the meadow-vole population which will out-compete the yellow-nosed vole for resources.

With respect to Section 248(b)(2), KCG contends that there is no credible evidence that the project is required to meet any need for power, and that there is unrebutted evidence that substantial additional energy could be saved through DSM measures. Thus, according to KCG, "EMDC has not established a need for the proposed project or that if such need existed it could

112. ANR Comments at 1.

113. KCG Comments at 15.

not be met in a more cost-effective manner by energy efficiency, energy conservation and/or load-management alternatives."¹¹⁴

As for Section 248(b)(4), KCG argues that the project imposes costs on ratepayers outside Vermont (to pay for the renewable energy credits) and on federal taxpayers (for the federal tax credit). KCG claims that EMDC has not demonstrated that the asserted economic benefits of the project outweigh these costs. KCG also disputes some of EMDC's assumptions regarding the estimated power production of the project, and contends that EMDC's economic benefit claims are accordingly exaggerated.

Conservation Law Foundation

While CLF supports many aspects of the PFD, especially those that recognize the benefits of the proposed Project and its lack of undue adverse impacts on many of the criteria, CLF asserts that the Board should reject the Hearing Officer's recommendation and issue a CPG. CLF criticizes the PFD's determinations regarding the Project's impact on scenery, claiming that the proposed decision ignores the balancing of interests required to assess aesthetic impacts set forth in the Board's *Searsburg* decision. When examined and balanced reasonably, according to CLF, it is clear that the benefits of this project do offset the visual impacts. Furthermore, CLF contends that the benefits of wind power would actually serve better to protect the easement values in the Champion Lands because it both reduces air pollution and serves to assist in the effort to mitigate climate change.

CLF also contends that the proposed decision misapplies the *Quechee* analysis because reasonable mitigating steps were taken to harmonize its project with the surroundings. CLF claims that the standard is not whether the steps taken will "effectively mitigate" the impacts, but whether the "available mitigating steps" have been taken.

Furthermore, CLF asserts that the proposed decision incorrectly determined that the Project would be shocking and offensive. CLF claims that the proposed decision fails to address how a public, adequately educated about the benefits of wind power, would consider the aesthetic impacts of the project. CLF contends that the benefits of wind power protect the very values

114. KCG Comments at 29.

claimed to be affected by the aesthetic impacts of this Project, including a vibrant and rugged forest that will support a multitude of public uses.

Moreover, CLF argues that the proposed decision provides no reasoned analysis as to why the visual impact is shocking and offensive in one location, but not in others. CLF opines that the PFD appears to set a rule that a distant view of a turbine is all right, but not a close view. Additionally, CLF notes that the PFD does not discuss how other developments at high elevations, such as logging and ski areas, visually impact the Champion Lands.

CLF additionally contends that the proposed decision incorrectly determines that the Project will "materially jeopardize or interfere with the function of the public investment in the former Champion Lands and with the public's use and enjoyment of those lands."¹¹⁵ CLF claims that due to the fact that the aesthetic impacts were erroneously determined, it follows that there would not be an unreasonable interference with the public's investment. CLF further asserts that the proposed decision ignores the actual easement values protected with public dollars. CLF claims that the wind turbines are not on the Champion Lands and thus would not affect either the remote or undeveloped nature of the Champion Lands or the public's access to them.

Renewable Energy Vermont

REV requests that the Board reconsider the viability of the *Quechee* Test relative to renewable energy projects due to its excessive subjectivity. REV asserts that the use of this test is neither compelled by statute nor otherwise mandated by law. REV recommends that the Board adopt a test that better accounts for strong federal and state policies favorable to the development of renewable energy sources and the environmental consequences associated with prospective alternative sources.

REV also suggests that the decommissioning funds are excessive based on its research and analysis. REV notes that the proposed decision does not take resale or salvage value into account, and requires the decommissioning fund to be created at the outset and then accordingly triggered if the project produces less than 2/3 of its projected output for any two consecutive

115. CLF Comments at 7 (quoting PFD at 75).

years. REV asks for the condition to be modified so that it will better reflect a more realistic and typical accounting of the realities surrounding wind projects.

REV contends that Vermont has a rigorous and thorough regulatory process for siting generation facilities, and that thus an additional three-year post-construction monitoring period for bat mortality is inappropriate. REV further asserts that the nature of the current power markets makes the securing of predictably priced long-term power contracts extremely difficult, and project financing is additionally hindered. REV claims that the overwhelming weight of evidence in the record establishes a bird and bat mortality risk that is very small, similar to the threat posed by cats and vehicles. Due to this evidence and the asserted, accompanying difficulties brought about by the reopener condition, REV requests that the Board not impose that condition.

Vernon and Ellen Gray

The Grays ask the Board to uphold the Hearing Officer's proposed decision because they believe that the protection of Vermont's ridgelines outweighs the need for this particular project. Furthermore, they assert that an industrial-scale wind project is not appropriate in the center of 132,000 acres of the Champion Lands which is intended for the recreation and traditional use of all Vermonters. Moreover, the Grays contend that because the Northeast Kingdom is so dependant on outdoor recreation tourism, the industrial-scale wind turbines would prove to be shocking and offensive, and not in keeping with the orderly development of the area.

The Nature Conservancy

TNC supports the Hearing Officer's findings and conclusions on birds and bats. If the Board decides to issue a CPG, TNC recommends at least two years of preconstruction studies (not the one year that the PFD recommends), at different times of the year and under a variety of weather conditions. TNC asserts that there should be an explicit condition allowing parties to petition for changes to the project's operation based on the results of the pre- and post-construction studies.

With respect to Bicknell's thrush and the yellow-nosed vole, TNC asserts that the PFD's proposed studies, plans and mitigation should be the minimum requirements, if the Board issues a CPG. TNC characterizes the proposed construction prohibition from May to August as especially important.

TNC urges the Board to carefully consider whether the risk to Bicknell's thrush is too great to allow the project to be built. While much has been made of the fact that the project consists of only four turbines, "in this location those few turbines could potentially remove a source population for a species of global rarity."¹¹⁶ Thus, according to TNC, the Board should consider what the appropriate standard should be for siting wind turbines under these circumstances, "given that source populations are one of the most critical resources for a rare species, any associated mitigation should provide overwhelming and indisputable positive benefit to the affected species on a global scale."¹¹⁷

Finally, TNC contends that the PFD presents a very careful exploration of the potential effect on the public investment in the former Champion Lands, especially the effect on public use of the lands. TNC emphasizes that the investment was not just for public recreation, but also for the protection of ecosystems and biodiversity. Thus, TNC argues that the Board should consider the possible effects on the long-term ecological integrity of the area, including the conservation of priority species like Bicknell's thrush and the yellow-nosed vole.

Central Vermont Public Service Corporation

CVPS supports the PFD's findings that Criteria (b)(3) and (b)(10) are satisfied, and recommends that, at least with respect to public utility facilities and transmission facilities, the Board should also find that the project complies with § 6086(a)(9)(K) (public investments).

116. TNC Comments at 2.

117. TNC Comments at 2.

CVPS expresses concern that the PFD, if adopted, "will have a very adverse, chilling effect on future development of wind energy projects in Vermont."¹¹⁸ Thus, CVPS asks that the Board issue a CPG, with "appropriate conditions."¹¹⁹

Jon Day

Mr. Day supports the PFD. He asserts that preserving Vermont's ridgelines is a "fundamental state value."¹²⁰ He also agrees with the PFD's conclusion that the petitioner did not undertake necessary wildlife studies.

Brian Kelly

Mr. Kelly labels the PFD as "commendable,"¹²¹ and adds that a minimum set-back and safety zones, due to the possibility of tower collapse and rotor shear as recently happened at Searsburg, should be required for wind turbines.

Fairwind Vermont

Fairwind argues that the Board should issue a CPG for the proposed Project. Fairwind contends that the Hearing Officer has struck the wrong balance between the impact of the project and the public good. Fairwind further asserts that the public policies favoring renewable energy development and protection of ridgelines and forests are complementary, because renewable generation projects reduce acid rain, mercury deposition, and greenhouse gas emissions.

Fairwind claims that the proposed Project will not interfere with the orderly development of the region. According to Fairwind, the project has strong local support, and will promote the region's orderly development by reducing the region's dependence on energy imported from other areas. Fairwind asserts that the PFD is mistaken in characterizing the surrounding lands as "undeveloped," given the logging that is allowed on the lands, the presence of the 450 kV transmission line, and the previous development of the project site as a radar base.

118. CVPS Comments at 1.

119. CVPS Comments at 2.

120. Day Comments at 1.

121. Kelly Comments at 1.

Fairwind contends that while the proposed Project may have an adverse impact on aesthetics, it would not be undue. To support its position, Fairwind points to polls that show general public acceptance of wind turbines, and notes that the context from which EMDC's wind turbines would be viewed includes roads, an existing 450 kV transmission line, commercial logging, and other motorized activities, and thus is not an undeveloped wilderness area. For similar reasons, Fairwind asserts that the proposed Project would not have a significant adverse impact on the public investment in the former Champion Lands, or on the public's use and enjoyment of those lands.

Discussion and Conclusions

Orderly Development, Aesthetics, and Public Investments

EMDC proposes to construct four, 329-foot-tall wind turbines in a seventeen-acre parcel at the summit of East Mountain, surrounded by the former Champion Lands that total approximately 132,800 acres. As the Hearing Officer has carefully detailed in his Proposal for Decision, the former Champion Lands have been the subject of an extensive effort to conserve their rugged, remote, undeveloped character, costing millions of dollars of public and private funds.

The Hearing Officer has concluded that the proposed wind turbines would be so fundamentally incompatible with the surrounding, conserved Champion Lands that the proposed Project would unduly interfere with the orderly development of the region, would have an undue adverse effect on the scenic or natural beauty of the area and on aesthetics, and would materially jeopardize or interfere with the function of the public investment in the former Champion Lands and with the public's use and enjoyment of those lands.

Notwithstanding this conclusion, the Hearing Officer acknowledges the substantial benefits of renewable energy projects such as this, and the corresponding fundamental state policy to encourage the development of in-state renewable generation. As the Hearing Officer correctly observes, the proposed Project would provide a number of benefits to the people of Vermont and to the region, including:

- promotion of fuel diversity and energy independence in Vermont's energy portfolio;

- economic benefit to LED and its ratepayers through the sale of the project's output to LED at five percent below the market price, and from LED receiving ten percent of any Renewable Energy Certificates from the project;
- slightly lower market electricity prices in the region, with the benefit being greater for customers located closer to the project;
- helping meet the regional demand for renewable energy;
- property tax revenues to the State of Vermont and to the Town of East Haven;
- short- and long-term economic benefits to the region from increased employment; and
- avoided air emissions through displacement of fossil-fired generation.

We recognize, as does the Hearing Officer in the Introduction to the Proposal for Decision, that deciding whether to approve this wind-generation facility requires a balancing between the decided benefits of this clean energy resource and its undeniable adverse impacts on the surrounding conserved landscape. Consistent with this Board's precedent, our consideration of a project's impacts on aesthetics and scenic or natural beauty must be "significantly informed by overall societal benefits of the project."¹²²

We adopt most of the Hearing Officer's findings with respect to the proposed Project's impacts on the orderly development of the region, on aesthetics, and on the public investment. Where we part company with the Hearing Officer is in our assessment of the scope of those impacts, and in the balance we strike when we weigh those impacts against the benefits of this renewable-energy facility.

The record before us shows that the proposed Project is unlikely to be visible from the vast majority of the conserved Champion Lands. The record also reveals that relatively few members of the public visit the Champion Lands, and of those who do, a substantial proportion are engaging in activities – particularly snowmobiling and hunting – the enjoyment of which is unlikely to be significantly degraded by the presence of four wind turbines on the summit of East

122. *In Re: Northern Loop Project*, Docket 6792, Order of 7/17/03 at 28.

Mountain.¹²³ Thus, while the proposed Project would have adverse visual impacts from a few select locations within the conserved, former Champion Lands, those impacts would be limited.

With respect to the orderly development of the region, the Hearing Officer has concluded: "For the development of this region to remain orderly, it must respect the concerted efforts to preserve the remote, undeveloped nature of the Champion Lands."¹²⁴ Although we agree in general with the Hearing Officer's sentiment that orderly development of the region should remain consistent with the conserved nature of the Champion Lands, we conclude that the proposed Project, with four wind turbines placed atop a previously developed mountain, with an existing road and nearby power lines (including the DC transmission line which runs directly through the Champion Lands), and with visibility limited to a small portion of the Champion Lands, would not so negatively affect the character of the surrounding conserved lands as to impede the orderly development of the region.

We similarly conclude, after taking all of these considerations into account, that the proposed Project will not materially jeopardize or interfere with the public's use and enjoyment of the public and quasi-public investment in the former Champion Lands, nor with the function of that investment,¹²⁵ and will not have an undue adverse effect on the scenic or natural beauty of the area and on aesthetics.

Accordingly, we hereby reject Findings 63, 165, and 263, and modify Findings 37, 155, and 254 to read as follows:

37. The proposed Project will not 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, the recommendations of the municipal legislative bodies, and the land conservation measures contained in the plan of any affected municipality. This finding is supported by Findings 38 to 62, below.

123. We note that snowmobiling use within the former Champion Lands is expected to significantly increase over the next ten to twenty years. Tr. 4/1/05 at 165 (Jewell); tr. 4/6/05 at 33 (Sargent); *see also* ex. KCG-WJ-22 at III-17.

124. PFD at 21.

125. We do not dispute the Hearing Officer's determination that the turbines would be shocking and offensive to *some* of the public users of the Champion Lands. However, we are convinced that those users are quite small in number, and that when the overall benefits and impacts of the proposed Project are considered, the turbines would not have an unacceptable impact on the conserved Champion Lands.

155. The proposed Project will not have an undue adverse effect on the scenic or natural beauty of the area and on aesthetics. This finding is supported by Findings 156 through 180, below.

254. The proposed Project will not unnecessarily or unreasonably endanger the public or quasi-public investment in, or materially jeopardize or interfere with the function, efficiency, safety, or the public's use, access to, or enjoyment of, public resources facilities, services, or lands. This finding is supported by Findings 255 through 265, below.

Birds and Bats

The Hearing Officer recommends that we find that EMDC has not presented sufficient evidence to conclude that the proposed Project would not have an undue adverse impact on birds and bats. We concur. As noted in the Proposal for Decision, little is currently known about the distribution, abundance and stability of Vermont's bat populations, especially migrant species. This lack of knowledge extends to such crucial information as the altitudes at which bats migrate. We do know, however, that bats in Vermont have low reproductive potential, generally producing one offspring per year. We also know that wind turbine sites located in eastern forested high-elevation sites have experienced elevated bat mortality rates. And we know that there are likely to be resident bat populations on East Mountain, based on the limited field study that has been performed to date by parties other than EMDC.

These facts lead us to conclude that, without sufficient study of (1) the resident bat populations near the site of the proposed Project and (2) the numbers and elevations of migrating bats passing over the project site, we are unable to find that EMDC's proposed wind turbines would not have an undue adverse impact on bats.

We reach a similar conclusion with respect to the potential impacts on migratory birds. The record shows that there is little solid information on the risks of migrating bird collisions with wind turbines for high-elevation sites in the northeastern United States. Without preconstruction radar studies, we are unable to determine whether the project's design has been optimized to avoid or minimize bird impacts.

While the proposed Project may be relatively small in scale, consisting of four 329-foot-tall turbines, its size alone does not provide enough evidence that it would not have undue

adverse impacts on resident and migratory bats and birds. We cannot sufficiently gauge those impacts without the site-specific studies that EMDC has elected not to supply.¹²⁶

Therefore, we adopt the Hearing Officer's findings, conclusions and recommendations concerning the proposed Project's impacts on birds and bats, and we accordingly deny a Certificate of Public Good to EMDC.

Other issues raised by the parties' comments on the PFD

In their comments on the Hearing Officer's Proposal for Decision, the parties have raised a number of additional issues, as noted above. These issues include, among others, the requirements that should be included in a decommissioning fund, and whether EMDC has excessively relied upon the use of post-certification filings such that it has failed to provide sufficient information to support positive findings on many of the Section 248 criteria.

Each of these additional issues been addressed by the Hearing Officer in his Proposal for Decision.¹²⁷ We have carefully reviewed the parties' comments on these additional issues, and find in those comments no basis for changing the Hearing Officer's recommendations. Instead, for the reasons that the Hearing Officer has presented in the Proposal for Decision, we adopt his findings, conclusions, and recommendations on each of these additional issues.

126. EMDC and REV each criticize as impractical the Hearing Officer's recommendation that, in the event we issue a CPG, we include a condition allowing parties to seek modification of the proposed Project based on the results of post-construction monitoring of bat mortality. The Hearing Officer's proposed condition was necessitated by EMDC's own refusal to conduct appropriate studies in advance of presenting its proposal to the Board. As we note above, in the absence of appropriate pre-construction studies, we cannot determine whether project modifications are needed to avoid undue adverse impacts, and thus we would not have been able to craft a more limited post-construction condition than that presented by the Hearing Officer.

127. One possible exception is the parties' comments claiming that denial of a CPG would discourage the development of other wind generation facilities in Vermont. We have addressed this concern in the Introduction to the Board Discussion, above.

V. ORDER

IT IS HEREBY ORDERED, ADJUDGED AND DECREED by the Public Service Board of the State of Vermont that:

1. The findings, conclusions and recommendations of the Hearing Officer are hereby adopted, as modified above.
2. The proposed Project will not promote the public good of the State of Vermont, and a certificate of public good shall not be issued pursuant to 30 V.S.A. § 248.

Dated at Montpelier, Vermont, this 17th day of July, 2006.

_____)	PUBLIC SERVICE BOARD OF VERMONT
)	
)	
s/David C. Coen _____)	
)	
s/John D. Burke _____)	

OFFICE OF THE CLERK

FILED: July 17, 2006

ATTEST: s/Susan M. Hudson
Clerk of the Board

NOTICE TO READERS: This decision is subject to revision of technical errors. Readers are requested to notify the Clerk of the Board (by e-mail, telephone, or in writing) of any apparent errors, in order that any necessary corrections may be made. (E-mail address: Clerk@psb.state.vt.us)

Appeal of this decision to the Supreme Court of Vermont must be filed with the Clerk of the Board within thirty days. Appeal will not stay the effect of this Order, absent further Order by this Board or appropriate action by the Supreme Court of Vermont. Motions for reconsideration or stay, if any, must be filed with the Clerk of the Board within ten days of the date of this decision and order.

Appendix A – Appearances

John Cotter, Esq.
for the Vermont Department of Public Service

John Kassel, Esq.
Andrew N. Raubvogel, Esq.
Shems Dunkiel & Kassel PLLC
for EMDC, LLC, d/b/a East Haven Windfarm

William B. Piper, Esq.
Primmer Piper Eggleston & Cramer, P.C.
for the Village of Lyndonville Electric Department

Warren Coleman, Esq.
David Englander, Esq.
Catherine Gjessing, Esq.
for the Vermont Agency of Natural Resources

Sandra Levine, Esq.
for Conservation Law Foundation

Kenneth C. Picton, Esq.
for Central Vermont Public Service Corporation

C. Daniel Hershenson, Esq.
Anthony Z. Roisman, Esq.
Hershenson, Carter, Scott & McGee, P.C.
for the Kingdom Commons Group

David L. Grayck, Esq.
Cheney, Brock & Saudek, P.C.
for The Nature Conservancy of Vermont

Vernon C. and Ellen Y. Gray
Pro Se

George Willy
Pro Se

Rob Roy Macgregor
for Fairwind Vermont

Appendix A continued:

Peter and Elisabeth Foukal
Pro Se

Jody M. Fried
Pro Se

Jon Day
Pro Se

Brian Kelley and Joan Harlowe
Pro Se

Andrew Perchlik, Executive Director
for Renewable Energy Vermont, Inc.