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January 22, 2009

Mrs. Susan M. Hudson, Clerk
Chittenden Bank Building
Vermont Public Service Board
112 State Street - Drawer 20
Montpelier, VT 05620-2701

Re: Docket No. 7250 – Deerfield Wind Project

Dear Mrs. Hudson:

Enclosed for filing with the Public Service Board is the initial brief of the Department of Public Service in the above referenced docket.

Please do not hesitate to contact us should you have any questions.

Very truly yours,

A handwritten signature in blue ink that reads "Jeanne Elias".

Jeanne Elias, Esq.
Laura Scanlan Beliveau, Esq.
Special Counsel

cc: Attached Service List



PSB Docket No. 7250 - SERVICE LIST

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STATE OF VERMONT
PUBLIC SERVICE BOARD

Docket No. 7250

Petition of Deerfield Wind, LLC, for a Certificate of Public Good authorizing it to construct and operate up to a 45 MW wind generation facility, and associated transmission and interconnection facilities, comprised of between 15 and 24 wind turbines on approximately 80 acres in the Green Mountain National Forest, located in Searsburg and Readsboro, Vermont, with turbines to be placed both on the east side of Route 8 on the same ridge lines as the existing GMP Searsburg wind facility (Eastern Project Area), and along the ridge line to the west of Route 8 in a northwesterly orientation (Western Project Area)

BRIEF OF THE
VERMONT DEPARTMENT OF PUBLIC SERVICE

January 22, 2009

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I. INTRODUCTION AND PROCEDURAL HISTORY

On January 8, 2007, Deerfield Wind (Deerfield) petitioned the Public Service Board (Board or PSB) pursuant to 30 V.S.A. § 248 for a Certificate of Public Good (CPG) authorizing Deerfield to construct and operate a 45 MW wind electric generation facility along with associated transmission and interconnection facilities atop ridges in the towns of Searsburg and Readsboro, Vermont.

Appearances were entered as follows:

Town of Readsboro and Town of Searsburg by Richard Saudek Esq.

VT Department of Public Service by Aaron Adler, Esq. and John Cotter, Esq.

[June Tierney, Esq. replaced Mr. Adler as counsel on 6/8/07, Laura Scanlan

Beliveau, Esq. replaced Mr. Cotter as counsel on 6/6/07 and Jeanne Elias, Esq.

replaced Ms. Tierney as counsel on June 23, 2008].

VT Agency of Natural Resources by Catherine Gjessing, Esq. and David

Englander, Esq. [Judith Dillon, Esq. replaced Ms. Gjessing on August 13, 2008.]

VT Division of Historic Preservation by Julie Kelliher, Esq. and John Kessler, Esq.

Windham Regional Commission by James Matteau, Esq.

Green Mountain Power Corporation by Benjamin Marks, Esq.

National Grid USA, Inc. by Nancy Malmquist, Esq.

Fairwind Vermont by Phoebe Mills, Esq.

Save Vermont Ridgelines, *pro se* by Denise Foery. (Initially this party was represented by counsel, C. Daniel Hershenson and Anthony Roisman, who subsequently withdrew as counsel on 8/7/08.

Industrial Wind Action Group, *pro se* by Lisa Linowes.

Tom Shea, *pro se*.

Conservation Law Foundation by Sandra Levine, Esq.

The Town of Wilmington by Robert Fisher, Esq.

Vermont Natural Resources Council by Jamie Fidel, Esq.

E. Donald Pike *pro se*

Clifford and Diana Duncan *pro se*

Duncan Cable TV Service *pro se* by Clifford Duncan.

Vermont Public Interest Research Group by Paul Burns.

On March 9, 2007 the Board issued an Order Regarding the Sufficiency of Deerfield's Original Petition for Conceptual Approval and in response on July 30, 2007 Deerfield supplemented its initial filing. On August 15, 2007 Deerfield filed an Amended Petition making numerous changes to the proposed project.

On September 6, 2007 a pre-hearing conference was held at the Board's hearing room on the third floor of the Chittenden Bank Building at 112 State Street in Montpelier. An initial schedule was established and set forth in the pre-hearing conference memorandum issued September 20, 2007.

Consistent with the requirements of 30 V.S.A. § 248(a)(4)(A), a public, non-technical hearing was held on October 2, 2007 at 7PM in Readsboro. A site visit was also conducted by the Board on the afternoon of October 2, 2007.

The following individuals and groups sought and were granted intervention on a permissive basis in this proceeding pursuant to the Board's Orders of 11/6/07 and 12/12/07:

Green Mountain Power, Vermont Natural Resources Council, Windham Regional Commission, Town of Searsburg, Town of Readsboro, Town of Wilmington, Conservation Law Foundation, Donald Pike, Vermont Public Interest Research Group, Fairwind Vermont, National Grid USA, Duncan Cable TV, Save Vermont Ridgelines, Clifford and Diana Duncan, Industrial Wind Action Group,

The initial schedule for this docket required all parties other than Deerfield Wind to submit prefiled testimony by 12/21/07. The Department and ANR submitted pre-filed testimony on the date it was originally due. On 12/20/07 and 12/21/07 SVR, DCTV and IWAG filed requests to modify the schedule.

In response to those requests, the Board issued an Order on 1/10/08 amending the schedule to give all other parties until April 28, 2008 to submit their prefiled testimony. The amended schedule also provided for a period of discovery through June 4, 2008; the submission of pre-filed rebuttal testimony by Deerfield on June 20, 2008; discovery through August 22, 2008; the submission of pre-filed sur-rebuttal testimony by all parties other than Deerfield on August 1, 2008; discovery on that testimony through August 22, 2008; and technical hearings from September 15 through 26, 2008.

The following discovery issues were raised by motion and ultimately resolved through Board Orders prior to the technical hearings:

- On March 4, 2004 SVR filed a Motion to Compel Discovery Responses from Petitioner Deerfield. Following Deerfield's March 20, 2008 response, the Board held a hearing on April 4, 2008 and entered an order resolving the matter on April 9, 2008.
- On July 7, 2008 Deerfield filed a Motion to Strike certain testimony of Lisa Linowes on behalf of IWAG. Following IWAG's July 22, 2008 response the Board ruled on 8/6/08 that Deerfield's Motion was denied as untimely filed.
- On July 25, 2008 DCTV filed a Motion to Compel certain discovery against Deerfield following Deerfield's July 7, 2008 Motion to Compel against DCTV.
- On 8/25/08 the Board denied DCTV's Motion to Compel and declined to rule on Deerfield's Motion as it was moot.
- On 9/22/08, the Board granted Deerfield's unopposed Motion for Protective Order concerning the testimony of certain SVR witnesses.

The Board issued a Revised Schedule on 6/20/08 which extended certain dates for discovery and the filing of sur-rebuttal testimony.¹ The Board also altered the hearing dates, canceling the hearings during the week of September 15th, and rescheduling them for October 2-3 and 6-7. On September 9, 2008 the Board issued a Notice of Hearing for these dates.

On September 21, 2008 IWAG filed an Emergency Motion to Suspend Hearing and Move Witnesses to a Later Date and Time. After hearing argument on the motion on 9/22/08 the Board granted the motion and rescheduled the hearings for the two week period beginning 12/1/08 and concluding 12/12/08. The technical hearings took place as scheduled and concluded on 12/12/08.

¹ This schedule called for Deerfield to file its rebuttal testimony on July 3, 2008. Along with its rebuttal testimony, Deerfield also announced a reduction to the size of the project from 17 turbines to 15 turbines, which is described in greater detail in the Project Description section, *infra*.

II. PETITIONER BACKGROUND AND PROJECT DESCRIPTION

Findings

1. On January 8, 2007, Deerfield Wind, LLC, (Deerfield) petitioned the Public Service Board pursuant to 30 V.S.A. § 248(a) for a Certificate of Public Good (“CPG”) authorizing Deerfield to construct and operate a 45 MW wind generation facility (comprised of between 15 and 24 wind turbines) and associated transmission and interconnection facilities on ridgelines located in the Towns of Searsburg and Readsboro, Vermont. In that petition, Deerfield asked the Board for conceptual approval of the project under Board Rule 5.402(c)(3), to be followed by post-certification review of the final design plans. See, Petition, generally.
2. Deerfield Wind LLC is a project Company, established in 2004 for the sole purpose of owning the assets associated with the development of the Deerfield Wind Project. It is a Delaware Limited Liability company registered in Vermont with its principal address in Portland, Oregon. When the Petition was initially filed, Deerfield was owned by PPM Energy, Inc., a wholly owned subsidiary of Scottish Power – a Scottish company that provides electricity generation, transmission and distribution services to customers in the U.S. and U.K. Zimmerman pf. at 4. However during the ensuing six months, PPM Energy, Inc. was acquired by Iberdrola, a large Spanish utility company. Zimmerman pf. (supp.) at 5.

3. The proposed project was to be located on land entirely within the Green Mountain National Forest (GMNF) on two separate ridgelines that lie to the east and west of State Route 8. (The Eastern and Western Project Areas) The Eastern Project Area was located on lands adjoining the existing Searsburg Wind Power Facility owned by Green Mountain Power Corporation (GMP). Zimmerman pf. at 6-8 and Exh. DFLD-JZ-3.
4. In order to construct the project on federally owned land, Deerfield's proposal must undergo federal review. The United States Forest Service must give a Special Use Authorization to the project pursuant to 16 U.S.C. § 497 and 36 C.F.R. § 251 *et seq.* This process involves the preparation of an Environmental Impact Statement (EIS) pursuant to the National Environmental Policy Act (NEPA) and ultimately, the approval of the Forest Supervisor. A Draft Environmental Impact Statement (DEIS) was completed in September of 2008 and made part of the record in this docket.
5. Deerfield must also follow Federal Aviation Authority Recommendations for lighting the project and must obtain a National Pollution Discharge and Elimination System (NPDES) permit for storm water discharges. The authority for the issuance of NPDES permits has been delegated by the United States Environmental Protection Agency to the Vermont Agency of Natural Resources.
6. On March 9, 2007, after soliciting comments from parties about the appropriateness of Deerfield's request for conceptual approval, the Board issued an Order determining that the initial petition did not comply with Rule 5.402(c)(3). The Board directed Deerfield to file "an amended proposal that

contains sufficient detail to allow meaningful review.” *Order Re: Sufficiency of Petition for Conceptual Approval* entered 3/9/2007.

7. On July 30, 2007, Deerfield filed supplemental direct testimony and exhibits which proposed a modification to the project, specifying the construction of 17 turbines and reducing the name plate capacity from 45 MW to 34 - 35.7 MW. The modified proposal specified the placement of seven turbines in the Eastern Project area and ten turbines in the Western Project Area. Deerfield proposed using turbines with rotors of 87 or 88 meters in size with a name plate power capacity of 2.0 or 2.1 megawatt. Zimmerman pf. (supp.) at 2-3 and Exh. DFLD JZ-Rev3. On August 15, 2007 Deerfield filed an Amended Petition based on the revised project.
8. On July 3, 2008, Deerfield filed its Prefiled Rebuttal Testimony and Exhibits and with that filing proposed a third modification to the project, reducing the number of turbines from 17 to 15 and further decreasing the nameplate capacity of the project to 30 MW “primarily to address concerns raised by the Agency of Natural Resources with respect to the potential impact on bear habitat.” Letter of 7/3/08 to Mrs. Hudson, PSB Clerk, from Attorney Geoff Hand, Shems, Dunkiel, Kassel & Saunders PLLC, for Deerfield.
9. The primary changes to the project were to the turbine layout and design of the access roads in the Western Site Area. The modifications included: 1) elimination of the three southern most wind turbines and the inclusion of an additional turbine at the northern end of the western turbine string; 2) shortening and rerouting of the western access road, reducing both the total acreage of potential black bear

impacts as well as the number of bear-scarred beech ("BSB") trees that would be directly impacted by the Project; 3) revising the road layout to the Eastern Site Area; 4) the use of two different sizes of rotors (80 and 87 meters) on Gamesa 2.0 MW turbines, to better match the site-specific wind conditions at each turbine site. Habig/Goland/Cherian (hereinafter "HGC") pf. (rebuttal) at 3-7.

Zimmerman pf. (rebuttal) at 1 and Exh. DFLD JZ-30a and 30b.

10. Each turbine consists of a tower, a nacelle and a rotor assembly. The tower is topped by the nacelle, which houses the main mechanical components of the turbine assembly
11. Tower height at the hub is approximately 80 meters (263 feet) with rotor diameter 70-90 meters (230-295 feet). The rotor assembly consists of three fiberglass blades approximately 35-30 meters (115-148 feet) long to the center of the hub.
12. Maximum turbine height with blade in the upright position ("tip height") is therefore approximately 125 meters (410 feet). Zimmerman pf. at 13-15.
13. Because the turbines exceed 200 feet in height, Federal Aviation Administration guidelines recommend the Project have safety lighting and notes that the FAA requires night time lighting of wind turbine strings with single red flashing L- 864 lights, located at the ends of each turbine string and at ½ mile intervals. Zimmerman pf. at 26-28. Deerfield proposes to comply with FAA Guidelines for the revised 15 turbine project by lighting a total of six towers in the Eastern and Western Project Areas. For each Project Area towers at the beginning, middle and end of each string would be lit. Exh. DFLD HGC-4.

14. The diameter of the base tower section at its widest point is approximately 4.9 meters (16 feet) and will be mounted on an exposed concrete foundation approximately 5.5 x 5.5 meters (18 x 18 feet). Zimmerman pf. at 13.
15. The turbines will interconnect to the grid via a substation to be constructed in the extreme northwestern corner of the Western Site Area, adjacent to the existing 69 kilovolt transmission line that crosses the mountain at this location. At the substation, the Project's 34.5 kilovolt electrical collection circuit will be connected to switchgear and 34.5 - 69 kilovolt transformers before connecting to the existing 69 kilovolt transmission line through a 3 ring bus. The substation and electrical interconnection gear will occupy an area of approximately 29,000 square feet. Zimmerman pf. (supp.) at 2-3 and Exh. DFLD-JZ Rev-4.
16. Two 34.5 kV collector circuits will connect the Eastern and Western Project Areas to interconnect the individual wind turbines to the step-up transformer. The system will use approximately 3.75 miles of underground facilities (due to high winds and severe icing in the immediate area of the turbines) and approximately 2.0 miles of overhead distribution class facilities. Estey pf. at 4.
17. Deerfield's initial proposal included consideration of using GMP's existing Sleepy Hollow Substation, but this option was eliminated by Deerfield as impractical and cost prohibitive because it would have required the establishment of a new three ring bus substation at the Sleepy Hollow Tap point in addition to extensive modifications of the Sleepy Hollow Substation. Estey pf. (supp.) at 1-3.

18. Deerfield proposes to construct Operations and Maintenance (O&M) facilities including a building, storage area and ancillary facilities on a parcel of private land at the western end of Putnam Road which Deerfield has rights to acquire. These facilities will serve as construction office and staging area during construction and as a central location for control, maintenance and storage activities during operations. The proposed building is anticipated to be approximately 100 square meters (1076 square feet) in size of metal frame construction with neutral coloration. Zimmerman pf. at 20-21. The original O&M facilities proposal was not altered by changes to the project.
19. The Project will require the upgrade of the existing road that leads to the GMP Searsburg Wind turbines in order to access the Eastern Project Area. To access the Western Project Area a new road will be constructed from the north at the end of Putnam Road. Service roads among the turbines will also need to be constructed. Exh. DFLD JZ-Rev4.
20. Total length of new road construction will be approximately 2,400 meters (7,900 feet) in the Eastern Project Area and 4,350 meters (14,270 feet) in the Western Project Area. Zimmerman pf. at 18-19.
21. Service (ridge or crane) roads will be twenty-two (22) feet wide on tangents and thirty-six (36) feet wide on curves. Access (haul) roads will be sixteen (16) feet wide on tangents and thirty-six (36) feet wide on curves. Maximum road grade will be twelve percent. Krzanowski pf. (rebuttal) at 1-4 and Exh. DFLD JK-11. Along with typical construction vehicles which include tractor trailer trucks, dump trucks, graders and bulldozers Deerfield proposes to use narrow track

cranes which require a 22-foot road. After construction service roads will be allowed to revegetate back to a width of 16 feet. Zimmerman pf. at 19-20.

CRITERIA UNDER 30 V.S.A. § 248(b)

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

Findings

22. The Project will not unduly interfere with the orderly development of the region, due consideration being 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. 30 V.S.A. § 248(b)(1).
23. Forty-five day notice of the proposed Project was given to the Windham Regional Planning Commission, and the Readsboro and Searsburg selectboards pursuant to 30 V.S.A. § 248(f). All towns within a ten-mile radius of the Project were provided copies of the notice as well. Letter of 1/8/07 to Mrs. Hudson, PSB Clerk, from Attorney Andrew Raubvogel of Shems, Dunkiel, Kassel & Saunders PLLC, for Deerfield.
24. The town of Searsburg has entered into an agreement with Deerfield which, among other things, provides the town with annual payments determined by the amounts of power and infrastructure located within the town. Exh. Searsburg-SF at 3.

25. The Town of Readsboro has entered into an agreement with Deerfield which, among other things, provides the town with annual payments determined by the amount of power generated within the town. Exh. DFLD-HGC-6 at 2.
26. The Town of Searsburg does not have local zoning or other community ordinances that relate to this project. Exh. DPS- MK-1 at 13.
27. The Town of Readsboro does have a town plan and local zoning. It does not appear to have a community standard that is clear enough to place the proposed project in violation. Exh. DPS- MK-1 at 13.
28. Readsboro's town plan outlines policies identifying the high scenic value of river corridors, scenic travel ways and scenic vistas and notes that such areas should be protected and preserved and that the sense of a Vermont rural community should be maintained. Exh. DPS-MK-1 at 14.
29. The Readsboro town plan notes that there are no scenic roads within the town. Exh. DPS-MK-1 at 13.
30. The Readsboro town plan notes three highways with significant vistas: King Farm on King Hill Road at the western edge of Harriman Reservoir; the former Boyd Farm on Potter Hill Road, looking east toward Whitingham; and near the intersection of West Hill Drive and Turner Road looking toward the south and east. Exh. DPS-MK-1 at 13-14.
31. The three highways' significant vistas appear to be focused away from the project site and would not be affected by the proposed project. Exh. DPS-MK-1 at 14.

32. Readsboro's town plan acknowledges the importance of habitat protection, recreational uses, aesthetic values and forest use and economics in, and for, its forest resources. Exh. DPS-MK-1 at 14.
33. The Readsboro town plan has a specific section outlining policies for wind energy. Exh. DPS-MK-1 at 14.
34. While the Readsboro town plan identifies the four most important issues for wind energy policy, economic benefit, aesthetics, environmental, and operational and safety, the only clear standard in the plan is that the Town shall participate in the section 248 hearing process for wind energy applications. Exh. DPS-MK-1 at 14.
35. The Readsboro zoning ordinance indicates that the project is within the Conservation Lands district. Exh. DPS-MK-1 at 14.
36. The zoning ordinance states that conservation lands "must be protected until there is a public need for their development." Exh. DPS-MK-1 at 14.
37. The zoning ordinance defines a windmill as a "device for converting the kinetic energy of the wind into a useable form" and notes that the development of windmills is subject to conditional-use review under Section 2.4.4 of the bylaw. Exh. DPS-MK-1 at 14.
38. Under the zoning ordinance, public utility power generating plants are regulated under the Special Public Use Exceptions of Section 3.2.5; this review specifies four standards: a. Screening unsightly or incompatible land uses such as substations, parking lots and refuse areas; b. Providing adequate circulation, parking and loading facilities with particular consideration to traffic visibility, flow and control, pedestrian safety, and emergency access; c. Setting back uses

from the property line to protect the privacy of adjoining property owners; and d.

Changing the density, size, height or bulk of buildings to ensure compatibility with established land use and orderly growth and development. Exh. DPS-MK-1 at 14-15.

39. The review standards of Section 3.2.5 are appropriate, but they do not specifically limit the potential acceptability of the proposed project. Exh. DPS-MK-1 at 15.
40. Searsburg and Readsboro fall within the aegis of the Windham Regional Planning Commission and the Windham Regional Plan. Exh. DPS-MK-1 at 15.
41. The goals and policies of the regional plan do not constitute a clear, written policy on which to evaluate the proposed project for compliance. Exh. DPS-MK-1 at 15.
42. The project will be largely located in the Green Mountain National Forest. Zimmerman pf. at 6-8; Exh. DFLD-JZ-3.
43. The United States Forest Service (USFS) adopted the Green Mountain National Forest (GMNF) Plan in 2006. Exh. DPS-MK-1 at 15.
44. The GMNF Plan contains standards and guidelines for attainment of visual quality objectives (VQOs) associated with land use allocations, including Wilderness (George D. Aiken wilderness area), Diverse Backcountry (USFS lands between the wilderness area and the project area), and Diverse Forest Use (the GMNF land where the proposed project would be located). Exh. DPS-MK-1 at 15.
45. The VQO varies depending on the assigned USFS Recreation Opportunity Spectrum for the land use allocation. Exh. DPS-MK-1 at 15.

46. The Draft Environmental Impact Statement (DEIS) contains a detailed analysis of visual effects and an evaluation of compliance with USFS management objectives. Exh. DPS-MK-1 at 15; DEIS at § 3.5.1.1.1, p. 96.
47. The public has been given an opportunity to comment on the analysis and public input will be taken into consideration before the Final Environmental Impact Statement and Record of Decision are issued. Exh. DPS-MK-1 at 15.
48. The Diverse Forest Use designation of the lands within which the project is proposed would seem to be reasonably compatible with wind farm uses. Exh. DPS-MK-1 at 15.
49. If the management objectives of the GMNF and the proposed project are not in alignment, the GMNF Plan may be amended. Exh. DPS-MK-1 at 15.
50. Ultimately the determination of whether or not the project is compatible will rest with the USFS. Exh. DPS-MK-1 at 15.
51. Overall, no clearly written community standards exist on which to ascertain the acceptability of the proposed project. Exh. DPS-MK-1 at 15.

Discussion

The Project will not unduly interfere with the orderly development of the region and the activities that currently take place on the lands surrounding the Project site will continue largely unaffected by the presence of the Project.

The Towns of Searsburg and Readsboro have voted in favor of the Project. The Town of Searsburg does not have a town plan. The Town of Readsboro has a town plan and zoning ordinances; the review standards within the zoning ordinance are appropriate and do not preclude the Project. The Windham Regional Plan does not

constitute a clear, written policy on which to evaluate the Project for compliance.

The GMNF plan is administered by the USFS and will be relied upon by the USFS in considering its own application process; the GMNF plan is not an appropriate community standard for the Board to rely upon in this proceeding.

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

Findings

52. The 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.
53. Many states, including Vermont and other New England states, have established various types of programs designed to encourage the development of renewable energy sources. Incentives are paid to developers of qualifying renewable energy projects through the sale of Renewable Energy Certificates ("RECs"). RECs are traded bilaterally or through brokers and currently prices for RECs have settled at a moderate level. This indicates that there remains a healthy demand for renewable energy. The proposed Project would help meet that demand. Thomas pf. at 2-3.
54. In Vermont, the legislature has adopted an analogous standard for energy from renewable projects known as "SPEED." Subject to certain conditions, SPEED requires each Vermont retail electric utility to supply an amount of energy equal

to its total incremental energy growth between January 1, 2005 and January 1, 2012 through the use of electricity generated by new renewable resources. A new wind project, such as that proposed here, qualifies under the program. Thomas pf. at 3.

55. The Project may also displace fossil fuel generation due to Vermont's ratification of the Regional Greenhouse Gas Initiative ("RGGI"). Under the RGGI agreement CO2 emissions from the electric sector are capped ("cap") at a certain amount. In order to emit CO2 a fossil fuel burning generator will be required to purchase a certificate allowing it to do so. The Project will decrease the demand for the certificates which could in turn, lower the price and thus make it easier for entities to comply with CO2 limitations. Thomas pf. at 4.
56. Deerfield is not a distribution utility and is not required to implement any energy efficiency or energy conservation programs, nor can it implement load management programs as it will not be selling electricity directly to retail consumers. Zimmerman pf. at 50.

Discussion

The Project meets 30 V.S.A. § 248(b)(2) because it will help meet a demand for renewable energy in Vermont and the New England region. Further, because Deerfield is not required to implement any energy efficiency or energy conservation programs, nor can it implement load management programs, the need served by the Project cannot be met by such alternative measures or programs. The real benefit of a non-emitting source, in terms of carbon emissions, is that it can be expected to lower the price for emissions certificates, which not only will make it easier for sources to meet targets, but may, in the

long term, encourage policy makers to lower the number of certificates issued in the region thus lowering the total amount of carbon emissions.

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

Findings

57. Deerfield has requested a system impact study for its currently proposed 30 MW wind turbine project from the Independent System Operator New England (ISO-NE) but the results of that study are not expected until April of 2009. Habig 12/1/08 tr. at 126. The Department can not provide a final opinion on this criterion until at a minimum the System Impact Study is completed by ISO-NE and reviewed by the Department. Jordan pf. at 2-5.
58. National Grid, in cooperation with Green Mountain Power, VELCO and ISO-New England, have reviewed the proposed design and conducted a feasibility study of the proposed interconnection alternatives for the initial 45 MW project. The study concluded that the existing 69kV transmission line was generally adequate to accommodate the addition of the 45 MW Deerfield Project, but recommended certain upgrades to lines in order to avoid possible overload conditions. Estey pf. at 7-10 and Exh. DFLD DE-9.
59. The current 30 MW Project would likely have a lesser impact than the 45 MW Project for which the initial feasibility study and system impact study were conducted. Estey 12/1/08 tr. at 223-226.
60. The ISO and/or VELCO will not allow Deerfield to interconnect the Project until Deerfield demonstrates that the Project will not cause adverse impacts to system stability and reliability.

61. Deerfield has agreed to be responsible for any costs associated with system changes or improvements necessitated by the project. Habig 12/1/08 tr. at 129.

Discussion

Deerfield has not yet obtained the final System Impact Study from ISO New England demonstrating that the Project will not have an adverse impact on system stability and reliability, however the positive results of the feasibility study and the system impact study for the initial 45 MW Project make it likely that the new System Impact Study will find that the smaller project will not have an adverse impact on the existing transmission system. The ISO-NE System Impact Study will determine what steps, if any, are necessary to protect the existing system from adverse impacts associated with the Project.

As a practical matter, ISO and VELCO will not allow interconnection by Deerfield until they are both satisfied that the Project will not have any adverse impact on system stability and reliability. Additionally, Deerfield will be responsible for the costs of any modifications necessary to protect the transmission system from Project impacts. In the event the Board determines that the evidence submitted to date is sufficient to make an affirmative finding under criterion (b)(3), the Department recommends the following condition as a basis for such a finding:

Deerfield Wind shall submit the final System Impact Study (SIS) and interconnection and substation plans to the Board and parties prior to construction. Parties shall have two weeks to file comments on the SIS and plans. Deerfield Wind shall implement any changes determined necessary by ISO New England Inc. or Vermont Electric Power Company, Inc. to ensure system stability and reliability, and shall pay for any costs associated with measures designed to ensure that the Project does not adversely affect system stability and reliability.

d. 30 V.S.A. § 248(b)(4) Economic Benefit to the State

Findings

62. The Project will result in an economic benefit to the state and its residents.
63. The Project will generate annual property tax revenues which will accrue to the State as well as to the towns of Searsburg and Readsboro. Thomas pf. at 5; Kavet pf. (rebuttal) at 3; and Exh. DFLD TK-2 at 4. Additionally, the agreements between Deerfield and Searsburg and Readsboro will result in annual mitigation payments to the town. Exh. Searsburg SF and Exh. DFLD-HGC-6 respectively.
64. The Project will result in some short and long term employment benefits in the region. During the construction phase of the Project over 250 jobs will be generated throughout the state with more than half of those located in Bennington and Windham Counties. During its operational phase, Deerfield expects the Project to generate approximately 9 permanent new jobs statewide with approximately 50% of these located in Bennington and Windham Counties. Exh. DFLD TK-2
65. Deerfield, through Iberdrola Renewables entered into a letter of intent (LOI) dated 12/12/ 08 with Green Mountain Power to negotiate a power purchase agreement (PPA) for a “10 MW vertical slice of the project”. Exh. DFLD-HGC-9. The LOI contemplates a stable price for a 15 year term. (The price per MW itself is confidential and is contained in Exh. DFLD HGC -10, filed under seal.) However this letter is not a contract and does not obligate either party to do anything. Habig 12/12/08 tr. at 233.

66. Deerfield has incorrectly monetized the value of reduced CO2 emissions from the Project due to RGGI. While renewable projects such as the Deerfield Project may ultimately promote the goal of reduced emissions, this will only occur in fact when policy makers decide to lower the CO2 emissions cap under RGGI or a similar program. Thomas pf. at 4 -5 and Lamont pf.(rebuttal) at 2-3.

Discussion

The Project will result in an economic benefit to the state and its residents. The Project will result in increased annual property tax revenues to the Towns of Readsboro and Searsburg as well as the State of Vermont. In the case of both towns, there will also be mitigation payments pursuant to the agreement between those towns and Deerfield. The Project will also generate both short and long-term employment opportunities.

Deerfield has incorrectly monetized the value of reduced emissions because it failed to take into account the impacts of applicable cap-and-trade programs. Additionally, it is not yet possible to determine the extent of financial benefits that may accrue as a result of power sales contracts with Vermont utilities because the amount of the capacity that will be committed to Vermont utilities is not yet known, nor are the terms and conditions of any such contracts clear at this time. However, it is likely that these contracts could yield some measure of economic benefit to the contracting utility, and thus its ratepayers. Were the Board to condition the approval of the CPG on Deerfield conducting good faith efforts to negotiate a PPA with Vermont utilities this could potentially make the economic benefit of the Project to Vermonters significant. The Department suggests that a condition similar to that in the UPC Wind Project (Docket 7156) would be useful. However, the condition should also require periodic

reporting on negotiation efforts with detailed explanations of why the negotiations are not successful.

While Deerfield has not properly quantified the economic benefits from the Project, it has demonstrated that there will be a net economic benefit based on the evidence allowed by the Board in this proceeding. Because the statute does not require any specified minimum level of economic benefit for a project to meet this criterion, Deerfield has met its burden under 30 V.S.A. § 248(b)(4).

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

Findings

- 67. The Project will not have an undue adverse impact on aesthetics, public health and safety, municipal services, and impact on public investment.²

Public Health and Safety

- 68. The Project will be located on land almost entirely within the GMNF on two separate ridgelines that lie to the east and west of Route 8. Zimmerman pf. at 6-8.
- 69. During construction, Deerfield will construct the Project consistent with its corporate commitment to meet all applicable state and Federal OSHA safety regulations. HGC pf. (rebuttal) at 26.

² Under 30 V.S.A. § 248(b)(5), the Department will address the issues of public health and safety, air purity, aesthetics, municipal services, and impact on public investment. The DPS anticipates that the Agency of Natural Resources will present the State's position on the natural resources criteria of this subsection and the Vermont Division of Historic Preservation will present the State's position regarding the Project's impacts to historic resources. Even though the Department is making a positive recommendation for the on 30 V.S.A. § 248(b)(5) criteria for which it is submitting findings, the Department does not recommend a finding that the project meets the criteria of 30 V.S.A. § 248(b)(5) over the Agency of Natural Resources's objections.

70. Access to the project facility will be controlled by being fenced and gated year-round. Public access to the sites will be limited in accordance with Forest Service and state requirements. Deerfield anticipates implementing a public access control plan similar to the plan in place for the existing Searsburg facility. Zimmerman pf. at 34-35, 53.
71. The Project is approximately one-half mile from the nearest public roads or private homes. Zimmerman pf. at 53.
72. Wind turbines and other structures will accumulate ice through normal winter operation. Ice falling from overhead structures or wind turbine rotor blades presents a potential hazard to persons in close proximity to the overhead structures. Zimmerman pf. at 55.
73. The safety distance, beyond which the probability of being injured by falling ice is very low, is approximately 836 feet. There are no public or private areas within this radius of the operating turbines. Zimmerman pf. at 55.
74. Site technicians will follow proper safety procedures to reflect any applicable federal or state safety codes when working in this environment. Zimmerman pf. at 55.
75. Noise generated from the operation of the turbines will be perceptible at some locations surrounding the Project site, but will be within World Health Organization Suggested Community Noise Criteria (Standards). Exh. DPS-MK-1 at 23.

76. The Resource Systems Group (RSG) noise study presented on behalf of the Petitioner was rigorous and conducted according to accepted standards and practices. Exh. DPS-MK-1 at 24.
77. The RSG report contains a summary of field monitoring and assessment of ambient noise conditions at seven key receptor sites conducted over the course of two different four-to-five-day time periods in late November and early December 2006; a discussion of various standards for noise levels; a Cadna-A model of projected noise conditions resulting from several operational scenarios; a review of noise frequency characteristics, infrasound, and low frequency noise; a comparison of projected noise levels versus standards and guidelines judged applicable by the applicant; and a discussion of construction noise impacts. Exh. DPS-MK-1 at 18.
78. The RSG report includes noise propagation modeling which predicts that, even when combined with the sound from the existing Searsburg facility, the Project can meet the noise standard of 45 dBA (night) at all nearby residences during times when windows would typically be open, and under the meteorological conditions specified in the ISO 9613-2 standard. Exh. DPS-MK-1 at 18.
79. The RSG report further concludes that no undue adverse impact would result from the project. Exh. DPS-MK-1 at 18.
80. Neither Searsburg nor Readsboro has specified quantitative community noise standards. There are no finalized federal or state statutes with respect to acoustics that apply specifically to the project. Exh. DPS-MK-1 at 19.

81. The USFS has recently issued draft national directives pertaining to Wind Energy on USFS lands. They would require that, when possible, applicants restrict noise to 10 decibels above background noise levels at nearby residences and campsites and near wildlife habitat. Exh. DPS-MK-1 at 19-20.
82. The RSG report discusses several noise level guidelines, including the U.S. Environmental Protection Agency's Protective Noise Level Guidelines, the World Health Organization (WHO) Suggested Community Noise Criteria, and the Bureau of Land Management Programmatic Environmental Impact Statement on Wind Energy Development. RSG selected the WHO guidelines of 45 dBA Leq (night) averaged over the entire night and 50 dBA Leq (day) averaged over the remainder of the day as an applicable noise goal for the Project. Exh. DPS-MK-1 at 20-21.
83. The WHO standard would be applied to areas of frequent human use during the summer months, including homes, yards, and porches, but not areas with transient uses, such as driveways, trails, and parking areas. Exh. DPS-MK-1 at 21.
84. RSG's model incorporated several assumptions, including ISO 9613-2 meteorological conditions favorable to propagation from sources of known sound emissions, omission of the attenuating effects of tree foliage, manufacturer supplied sound data from a GE 1.5 MW sl turbine at a 72 meter hub height with a sound power rating of 104dBA at the highest wind speeds as measured at hub height, the eleven existing turbines at a height of 40 meters above ground and the originally proposed 24 new turbines at 72 meters above the ground. With these assumptions, wind farm noise levels were computed on a 25 meter-by-25-meter

grid of modeled receptors covering 20 square miles around the site. Discrete receptors were placed at all residential homes using the Vermont E-911 database. Exh. DPS-MK-1 at 21-22.

85. The results of the modeling analysis show that the highest sound level modeled at a home is just under 45 dBA. Exh. DPS-MK-1 at 22.
86. According to RSG's contour map of differential noise levels between existing and proposed conditions, the +10 dBA contour is shown in a relatively narrow band tightly centered on the turbine arrays and extending no more than approximately 0.25 mile from their base. No residences or identified forest facilities are located within this zone. Thus, the Project would meet the draft Forest Service Noise Directive as it pertains to residences and campsites. Exh. DPS-MK-1 at 22.
87. RSG also conducted a frequency analysis of actual on-site meteorological conditions by obtaining one year of hourly wind speed and wind direction data from the ridge-top meteorological towers in Searsburg. This analysis goes beyond modeling conducted for prior wind farm projects reviewed by the Board; prior dockets presented only modeled projected noise levels associated with ISO 9613-2 meteorology and did not take into account actual on-site meteorological conditions. RSG found that there would be no hours of the year exceeding 45 dBA with only the Deerfield turbines operating and with both the Searsburg and the Deerfield turbines operating, there was a 99% probability that any hour would be at or below 45 dBA. Of the hours with both sets of turbines operating that would exceed 45 dBA, none would occur during the warm-weather months of May to September. With combined operations, there would be no period during

which the average 8-hour nighttime sound level would exceed 45 dBA. Exh.

DPS-MK-1 at 22-23.

88. RSG's review of manufacturer data indicates that the Project will not produce noise at infrasound frequencies below about 20 hertz, which can cause health-related effects and structural vibration. Exh. DPS-MK-1 at 23.
89. During construction, the underlying rock will have varying resistance to excavation. Methods for excavation include pulling rock apart either with an excavator bucket or with a bulldozer pulling a rear-mounted ripper tooth across the rock, banking the rock apart using a tracked excavator fitted with a pneumatic hoe-ram, or blasting, as a last resort. Krzanowski pf. at 26-27.
90. If necessary, blasting will involve a pre-blast survey coordinated among landowners, a geotechnical engineering firm and the insurer. Abutting landowners would be notified. No explosives will be stored on site. Following industry practice and regulations, the blasting company would pursue all licenses, bonding and local permitting. Krzanowski pf. at 27.

Discussion

The project will not create an undue, adverse impact on the public health and safety, provided appropriate standards are imposed on the Project. The turbines are situated on land, primarily within the boundaries of the Green Mountain National Forest. Deerfield will fence and gate the area around the project with signage to restrict public access to the site. The nearest residence to the revised turbine layout is a half of a mile away, beyond the maximum calculated ice throw distance from the turbines

With respect to noise, the Department and the Petitioner agree that the study performed by the Petitioner was rigorous, met industry standards, and exceeded the level of studies previously submitted in wind projects to the Board. Witnesses for the Department and the Petitioner agree that it would be appropriate for the Board to impose an absolute standard to protect the nearest receptor points from undue noise impacts from the Project. The Department recommends that monitoring should take place to ensure that the imposed standard is not exceeded. In the event that noise from the Project exceeds the imposed standard, Petitioner should create and implement a mitigation plan.

Impacts from blasting that may be part of the construction phase of the Project can be mitigated through the application of proper techniques such that undue adverse impacts are not anticipated.

The Department recommends the Board impose the following conditions if it issues a CPG for the project:

Blasting shall be minimized to the extent reasonably practicable and shall be performed only during regular business hours.

For all blasting work to be performed on the Project, Deerfield shall use only fully certified and licensed blasters.

Prior to performing any blasting for the Project, Deerfield's blasting contractor will develop a blasting plan and Deerfield and its blasting contractor will arrange for a public information session with surrounding landowners to respond to any concerns related to blasting for the Project and to explain what should be expected under the blasting plan. In the event any nearby landowners express concern about blasting impacts to structures or water wells on their property, Deerfield shall perform evaluations to determine if any damage has occurred as a result of its blasting activities and, if so, remediate such damage.

All blasting will be performed in accordance with any and all applicable laws and regulations, including but not limited to U.S. Department of Interior Rules 816.61-68 and 817.61-68 and the Blasting Guidance Manual, Office of Surface Mining, Reclamation and Enforcement, U.S. Department of Interior to limit peak particle velocity and ground vibration to safe levels. Noise and air blast effects shall be limited through application of proper techniques and blasting mats will be used where needed to limit the occurrence of flyrock.

Deerfield shall construct and operate the Project so that it emits no prominent discrete tones pursuant to ANSI standards at the receptor locations, and so that Project-related sound levels at any existing surrounding residences do not exceed 45 dBA (exterior)(Leq)(1hr) or 30 dBA (interior bedrooms)(Leq)(1hr). Deerfield shall create a monitoring plan to document compliance with this standard. Deerfield shall report at least annually to the Board on its compliance.

In the event noise from operation of the Project exceeds the levels permitted under the CPG, Deerfield shall take all remedial steps necessary to bring the sound levels produced by the turbine(s) into compliance with CPG requirements. In the event Deerfield is unable to correct the problem, the offending turbine(s) will be subject to decommissioning review.

Air Pollution
[10 V.S.A. § 6086(a)(1)]

Findings

91. Operation of the turbines will not produce any emissions. No air pollution permits will be required for the Project. Zimmerman pf. at 56.
92. The power generated by the turbines may displace fossil fuel generation. In New England, the marginal energy source is fossil fuel (natural gas, coal or oil) and the emissions that would have been created in the absence of the Project may be displaced. It is not clear the Project will actually lower emissions due to the existence of cap-and trade regimes such as the Regional Greenhouse Gas Initiative. It is possible that the addition of a non-emitting generation source in

the region could lower the price of emissions certificates, and thereby create an environment which could lead to the lowering of the emissions cap. Thomas pf. at 2-4.

Discussion

The Project will not have an undue adverse impact on air quality in the region. While it is not clear that the Project would result in a net emissions benefit to the region, no additional emissions will be caused by operation of the turbines. Given that operation of the turbines will not produce any emissions the Project will not have an undue adverse impact on air quality.

Scenic or Natural Beauty, Aesthetics, and
Rare and Irreplaceable Natural Areas
[10 V.S.A. §§ 1424a(d)(7)-(9) and § 6086(a)(8)]

Findings

93. The Project will be located on land primarily located within the GMNF.
Zimmerman pf. at 6.
94. The revised project includes the installation of 15 34-35.7 MW wind turbines on ridges to the east and west of Route 8 in Searsburg and Readsboro. The turbines to be used will be Gamesa 2.0 MW turbines with 80 meter rotors on the eastern ridge and 87 meter rotors on the western ridge. Zimmerman pf. at 1, 6; HGC pf. (rebuttal) at 3-7; Exh. DFLD JZ-30a and 30b.

95. The G80 on the eastern ridge has a tip-height of 393 feet. The turbines on the western ridge are G87s and have a tip height of 410 feet. Kane pf. (sur-rebuttal) at 2.
96. Six to seven turbines may have navigational lights. These navigational aids will consist of small, slowly pulsing red lights. The lights themselves would not be visible from most locations and there would be no perceptible beam of light emitting from these bulbs. The only conditions in which “sky glow” might occur would be when there was low cloud cover hovering directly over the lights themselves. Vissering/Buscher pf. (rebuttal) at 22.
97. All ridgeline power lines will be buried underneath the road. Above-ground power lines (“collector system”) will connect the turbines to a substation on single poles approximately 35-45 feet in height. They will run along access roads where possible. Poles will be located so that they are within existing wooded areas and, for the most part, will be screened from view. Additional trees will be planted to screen the roadside poles if necessary. The collector line would be seen briefly crossing Route 8, but dense tree cover west of Route 8 would screen poles from view. The collection line will be run underground from the southernmost turbine on the west to the end of the ridge. Vissering/Buscher pf. at 7-8; HGC pf. (rebuttal) at 6.
98. The collector system will connect to a substation at a newly constructed substation in the northern end of the Western Project Area near the existing 69 kV transmission line. The substation would be screened from public viewing places

using existing vegetation supplemented with planted vegetation as necessary.

Vissering/Buscher pf. at 8; see also Estey pf. (supp) at 1-3.

99. Maintenance building and laydown area are planned for a parcel of private land at the western end of Putnam Road which Deerfield has rights to acquire. The proposed building is anticipated to be approximately 1076 square feet and made with metal frame construction with neutral coloration. Vissering/Buscher pf. at 8; Zimmerman pf. at 20-21.
100. Service roads will be constructed to run between the turbines and access roads will connect the service roads to the existing public roads. Zimmerman pf. at 17.
101. On the eastern ridge, the project will use the existing Searsburg Wind Facility access road and will require the beginning of a new service road. The road will need to be widened to approximately 16 feet from the present 13 feet with a possible modification to the right angle turn at the base of the mountain in the vicinity of the Sleepy Hollow substation. The intersection of the present GMP access road with the Sleepy Hollow road may also need slight modifications to allow for the passage of the large equipment components and transport vehicles. Beginning at the southerly end of the present GMP road at the top of the hill, a new service road will be constructed from the southern end of the existing Searsburg service road south through the Eastern Project Area for approximately 7900 feet. Zimmerman pf. at 18.
102. On the western ridge, a new access and service road will be constructed of approximately 14,270 feet in combined length. This road will be connected to Route 8 by a northern and/or possibly a southern access road. The northern

access road option is shorter by approximately 500 feet and follows an existing logging trail and Forest Service easement to connect the northern end of the Western Project Area service road to Putnam Road. The junction of Putnam Road and Route 8 will need to be widened and re-graded if the transportation of large construction traffic is required along this route. If the southern access road is constructed it will be approximately 3610 feet in length and will connect to Route 8 opposite the present junction of Sleepy Hollow Road and Route 8. The intersection of the southern access road with Route 8 will require substantial re-grading. Zimmerman pf. at 19.

103. The roads were originally created to have a cleared riding surface during construction of up to 38 feet, but with the revised turbine configuration will need to be only 22-feet wide. The roads will be maintained at 4.9 meters (16 feet) after construction and until it is necessary to use the road for equipment replacement or other purposes. Zimmerman pf. at 18-19; HGC pf. (rebuttal) at 6.
104. The vegetative pattern of the surrounding area is quite varied with a mix of hardwoods (deciduous) and softwoods (conifers). Forest cover is extensive, especially with the 2.5 mile vicinity of the Project, of which 93% is forested. At the 5 mile limit, 88% is covered with vegetation and, at the 10 mile boundary, 86% is so covered. Exh. DPS-MK-1 at 5.
105. The lands surrounding the Project are rural with little built environment. To the south, at the intersection of Routes 8 and 100, is Heartwellville. Within the immediate vicinity of the project, most structures are residences, 126 residences and 38 camps or second homes. There are no schools or public meeting spaces

within the 2.5 mile vicinity. The buildings remain primarily residential at the 5 and 10 mile boundaries, although the percentage of second homes increases from 23% at the 2.5 mile boundary to 49% at the 5-mile boundary. Exh. DPS-MK-1 at 5-6.

106. The existing Searsburg Wind Project operated by Green Mountain Power constitutes the most notable built feature in the landscape. The existing 199 foot tall structures are notable from many vantage points within the region. Exh. DPS-MK-1 at 6.
107. Three major routes define the road infrastructure within the project study area; Route 9, traveling east-west between Brattleboro and Bennington; Route 8/100, beginning at Route 9 in Searsburg and heading south in such a way as to bisect the two proposed arrays (into east and west). These routes are 55 miles per hour and fairly lightly traveled through the project area. The majority of travelers do not enter the 2.5 mile project vicinity, where visibility of the project is potentially highest. Exh. DPS-MK-1 at 6.
108. Based on topographic conditions, within ten miles of the project site, the pattern of potential visibility is generally evenly distributed around the ridgelines. Within about five miles of the project site, the areas to the east are more likely to view the Project. Between five and ten miles out, the potential visibility is reduced significantly, focusing on higher peaks, including Haystack and Mount Snow, areas near Harriman Reservoir, and at a few key points along Route 9 and Route 8. Exh. DPS-MK-1 at 7.

109. While there are many areas within the region from which the project might be visible, three viewpoints are considered critical in that they have clear documented views of the project, are readily accessible to the general public and are representative of other views that might exist. They are Route 9 in Woodford, Ward's Beach at Harriman Reservoir, and Route 100 in Readsboro near Heartwellville. The views from these points are generally open and obvious. All three of these critical viewpoints have a visually sensitive landscape, a direct or nearly direct view of one or more of the turbines, and a population of viewers who could routinely access the vantage point. Exh. DPS-MK-1 at 10-11.
110. The Quechee Analysis first tests whether the proposed project's impacts are adverse. Second, if the project would have an adverse aesthetic impact, it determines whether that impact would be undue. Exh. DPS-MK-1 at 10-11.
111. Under the Quechee Test, the project would result in an adverse impact to the surrounding visual resource because the landscape context is sensitive to impacts, the introduction of additional wind turbines is incompatible with the general natural and built condition of the landscape, and the project is visible from a variety of vantage points, including some with cultural and recreational importance. Exh. DPS-MK-1 at 12.
112. The impact of the project, although adverse, would not be undue under the Quechee Test. Although the project does constitute a change within the landscape, it would not be shocking to the average person for three reasons. First, the project would generally be visible for short durations from public vantage points. Areas within two to three miles would have generally fleeting glimpses.

Most residences in the immediate vicinity would also have relatively limited views. The presence of the existing turbines on an adjacent ridgeline helps integrate the proposed turbines into the landscape. Although the scale of the new turbines is larger, they are not so dissimilar as to be shocking. The separation of the project into two arrays on two ridgelines limits the degree to which the overall magnitude of the project can be seen. Other than from some short-duration areas along Route 8, only a small portion of the project would be visible from any one location. Exh. DPS-MK-1 at 13.

113. No clearly written community aesthetic standards exist on which to ascertain the acceptability of this proposed location. Exh. DPS-MK-1 at 16.

Discussion

The Public Service Board has adopted the Environmental Board's Quechee analysis for guidance in assessing the aesthetic impacts of projects proposed under Section 248.³ In determining whether the Project will have an undue adverse effect on the aesthetics of an area, the Board employs the two-part test first outlined by the Vermont Environmental Board in its Quechee decision,⁴ and as further defined in later decisions.

³ Petitions of Vermont Electric Power Company, Inc. and Green Mountain Power Corporation for a Certificate of Public Good authorizing VELCO to construct the so-called Northwest Vermont Reliability Project, said project to include: (1) upgrades at 12 existing VELCO and GMP substations located in Charlotte, Essex, Hartford, New Haven, North Ferrisburg, Poultney, Shelburne, South Burlington, Vergennes, West Rutland, Williamstown, and Williston, Vermont; (2) the construction of a new 345 kV transmission line from West Rutland to New Haven; (3) the construction of a 115 kV transmission line to replace a 34.5 kV and 46 kV transmission line from New Haven to South Burlington; and (4) the reconductoring of a 115 kV transmission line from Williamstown to Barre, Vermont, Docket 6860 Order of 1/28/05 at 79-80.

⁴ Quechee Lakes Corporation, #3W0411-EB and 3W0439-EB. January 13, 1986.

Under Quechee, a determination must first be made as to whether a project will have an adverse impact on aesthetics and the scenic and natural beauty. To have an adverse impact, a project must be out of character with its surroundings. Specific factors considered in this evaluation are 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.⁵

If a project is determined to have an adverse impact, the next step in the two-part test is to determine whether the adverse impact rises to the level of being "undue." The adverse impact is considered undue if any of the following questions is answered affirmatively:

Does the project violate a clear written community standard intended to preserve the aesthetics or scenic beauty of the area?

Has the applicant failed to take generally available mitigating steps which a reasonable person would take to improve the harmony of the project with its surroundings?

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?⁶

⁵ Docket 6860, Order of 1/28/05 at 79-80.

⁶ *Id.* at 80.

The Board's assessment does not end with the results of its analysis under Quechee. The Board's final assessment of the impacts of a particular project is "significantly informed by the overall societal benefits of the project."⁷

Part One: Adverse Impact

The Project will have an adverse impact on the aesthetics and the scenic and natural beauty of the surrounding area because the Project is incompatible with its surrounding landscape, which is sensitive to impacts, and because the Project is visible from a variety of vantage points, including some with cultural and recreational importance.⁸

Part Two: Undue Impact

The adverse impact of the Project will not be undue and therefore passes the second prong of the Quechee Test.

The Project does not violate any clear, written community standards.⁹ No regional or local planning documents contain any specific language associated with a wind farm project or any specific standard that the proposed project would violate.¹⁰ Searsburg does not have any local zoning or other community ordinances that relate to this plan.¹¹ The Readsboro zoning ordinance does not contain any specific language limiting the potential acceptability of the proposed project.¹² Similarly, the Readsboro Municipal Plan does not have a community standard clear enough that the Project would

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

⁸ Exh. DPS-MK-1 at 12.

⁹ Kane pf. at 9-10.

¹⁰ Kane pf. at 10; Exh. DPS-MK-1 at 16.

¹¹ Exh. DPS-MK-1 at 13.

¹² Exh. DPS-MK-1 at 15.

be in violation.¹³ The Windham Regional Plan's goals and policies do not constitute a clear, written policy on which to evaluate the Project for compliance.¹⁴ The Green Mountain Forest Management Plan also affects the land on which the Project is proposed to be sited. However, while this plan does provide guidance for USFS's management objectives, in and of itself it does not constitute a clear standard; it merely defines a process through which the applicant can submit pertinent information and ultimately receive a determination of whether or not the proposed action is in conformance with the objectives of the Plan.¹⁵

The applicant has taken reasonable steps for mitigation by choosing a site that is somewhat remote, where existing transmission line rights-of-way are proximate, and where access to roads is reasonable.¹⁶ It also, in some respects, represents a collocation opportunity with the adjacent Searsburg Wind Project.¹⁷

Finally, the Project will not be shocking or offensive to the average viewer or significantly diminish the scenic qualities of the area. While a project such as this can be shocking when viewed up close, and there is a reasonable likelihood that average persons will view the Project from a vantage point closer than six miles from the site, such views are generally of short duration.¹⁸ Beyond six miles, the size and scale of the Project is greatly reduced.¹⁹ The presence of the existing Searsburg Wind Project within the visual environment reduces the likelihood that the Project can be shocking even at close

¹³ Exh. DPS-MK-1 at 13.

¹⁴ Exh. DPS-MK-1 at 15.

¹⁵ Kane pf. at 10.

¹⁶ Kane pf. at 11.

¹⁷ Kane pf. at 11.

¹⁸ Kane pf. at 9; Exh. DPS-MK-1 at 13.

¹⁹ Kane pf. at 9.

proximity.²⁰ The design of the project limits the overlapping of turbines and minimizes the numbers of turbines that can be seen from any one vantage point.²¹

The Department recommends the following conditions be imposed by the Board for any CPG issued for the Project:

All turbine towers will be painted white or off-white.

Deerfield shall obtain and submit the final FAA determination prior to the construction of the turbine towers. No further Board action is necessary unless the contents of the determination are materially different from Deerfield's prior representations to the Board or would materially impact any of the substantive criteria under 30 V.S.A. § 248(b).

Deerfield shall submit a re-vegetation and landscape plan for disturbed areas created by the access road, substation, and transmission line infrastructure.

Development Affecting Public Investments
[10 V.S.A. § 6086(a)(9)(K)]

Findings

114. The Project will not unreasonably endanger any public or quasi-public investment, nor will it materially jeopardize or interfere with the function, efficiency, or safety of, or the public's use or enjoyment of, any such investment.
115. The Project will be visible from a number of public investment locations, including the Harriman and Somerset Reservoirs and the George D. Aiken Wilderness Area. Kane pf. at 5.

²⁰ Kane pf. at 9; Exh. DPS-MK-1 at 13.

²¹ Kane pf. at 9; Exh. DPS-MK-1 at 13.

Discussion

The Project will not unreasonably endanger any public or quasi-public investment nor will it materially jeopardize or interfere with the function, efficiency, or safety of, or the public's use or enjoyment of any such investment.

The Project will be visible from certain public viewpoints such as the Harriman and Somerset Reservoirs and the George D. Aiken Wilderness Area. However, most of the views will be from limited locations and will either be intermittent in nature or will be from a distance that will diminish the visual impact of the turbines. There will be visual impacts. However, the test under this criterion is not whether there will be an impact, but whether that impact will unreasonably endanger the investment or materially interfere with the public's use and enjoyment of the investment.

There is no evidence in the record to suggest that the Project will unreasonably endanger the public investment in any of the public lands, parks or roads surrounding the Project site. Similarly, there is no evidence to support a finding that the Project will materially jeopardize or interfere with the function, efficiency or safety of, the public's use or enjoyment of, or access to, these investments. The evidence suggests that the public will continue to have access to these locations and will be able to engage in all the permitted activities within those locations. Overall the impact on the public's use and enjoyment of these areas will be limited and therefore will not rise to the level of material interference.

f. 30 V.S.A. § 248(b)(6) Consistency With Least-Cost Integrated Plan

Findings

116. The Petitioner is not required to have an approved least-cost integrated plan and this criterion is therefore inapplicable. 30 V.S.A. § 218c(a) Zimmerman pf. at 64.

g. 30 V.S.A. § 248(b)(7) Consistency With the Department's 20-Year Plan

Findings

117. The Project is consistent with the Department's 20-Year Electric Plan.
Zimmerman pf. at 64-67 and Thomas pf. at 11.

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

Findings

118. There are no water courses at or adjacent to the Project site that have been designated as Outstanding Resource Waters. Zimmerman pf. at 56 and Lew-Smith pf. at 7.

i. 30 V.S.A. § 248(b)(9) Waste to Energy Facilities

Findings

119. The Project is not a waste-to-energy facility and this criterion is therefore inapplicable.

j. 30 V.S.A. § 248(b)(10) Existing or Planned Transmission Facilities

Findings

120. Deerfield has not yet submitted a completed ISO-New England system impact study for the revised 30MW Project so it is not possible to determine whether it will have an adverse impact on system stability or reliability. A facilities study will also be completed for the Project. The Department will need to review, at a minimum, the system impact study before it can make a determination for this criterion. Jordan pf. at 2-3.
121. Deerfield did obtain a feasibility study for the original 45MW project, which suggested that VELCO's Y25N transmission line would need to be upgraded. Deerfield, in prefiled testimony, noted that "Velco is already in the process of upgrading their portion of the Y25N line and has determined that the additional upgrade could be accomplished at no incremental cost." Estey pf. at 8.

Discussion

As a practical matter, ISO and VELCO will not allow Deerfield to interconnect with the transmission system until they are both satisfied that the Project will not have any adverse impact on system stability and reliability. In addition, Deerfield would be responsible for any costs of interconnection related to such impacts from the Project. In the event the Board determines that the evidence submitted to date is sufficient to make an affirmative finding under criterion (b)(10), the Department recommends the following condition as a basis for such a finding:

Prior to the commencement of any significant construction activities, Deerfield shall submit final reports from the ISO and VELCO detailing what steps, if any, are necessary to interconnect the project without adverse impacts to system stability and reliability. The reports will be subject to review and comment by the Department and approval by the Board, and Deerfield will bear all costs associated with any steps identified in the reports as necessary for interconnection.

ADDITIONAL ISSUES

Decommissioning Fund

Findings

122. It is necessary for a fund to be established to decommission the Project in the event the
123. Project does not succeed, or to insure its timely and permanent removal at the end of the Project's useful life. *Id.* pf. at 9.
124. Deerfield acknowledges that decommissioning should include: (i) disassembly and removal of all turbine components and their associated transformers from the site; (ii) dismantling and removal of all 34.5 kV transmission line and associated junction boxes; (iii) disassembly and disposal of all substation components from the site; and (iv) removal of access roads and restoration and reseedling of disturbed areas. *Exh. DFLD JZ- Rev-12.*
125. The Petitioner has submitted an estimate of costs for decommissioning the Project.
126. However, the estimate includes estimated salvage value for the Project components and calls for the startup of the fund at year 15 of operations. *Zimmerman* pf. at 35-37 and *Exh. DFLD JZ- Rev-12.*

127. The amount placed in the decommissioning fund should represent the full estimated costs of decommissioning and there should be no netting out of the estimated salvage value.
128. Deerfield's offer to post a letter of credit prior to the commencement of construction is reasonable. Lamont pf. (rebuttal) at 4. The decommissioning fund should be bankruptcy remote to protect it against creditor claims in the event the Project encounters financial difficulty. Ide pf. at 11.
129. It is necessary to define under what circumstances the Project will be decommissioned based on the productivity of the Project over time. If the Project fails to produce at least 65% of the output projected by Deerfield in any consecutive two-year period, then a decommissioning review should be instituted. The specifics of this mechanism as well as the fund itself can be part of a post-certification review process. Ide pf. at 13.

Discussion

The Board should require that the Petitioner establish and fully fund a decommissioning fund prior to the commencement of construction of the Project to ensure that the Project site is returned to an appropriate condition should the Project fail, or at the end of the Project's useful life. The amount in the decommissioning fund should not be net of the estimated salvage value for any components of the Project or any other assets of Deerfield. The purpose of the decommissioning fund is to insure that there are sufficient funds available to decommission the Project should that become necessary. Establishment of a fund that is net of estimated salvage value places an unacceptable risk

on Vermont taxpayers and the Board should not accept any proposal by Deerfield that contains less than the full amount necessary to decommission the Project.

Additionally, the fund should not be controlled by or be an asset of Deerfield or any of its affiliates. It is imperative that the resources reserved for decommissioning are creditor and bankruptcy remote to insure that they are available in the event Deerfield finds itself in financial distress. The Board should also establish a production threshold for the Project whereby decommissioning review is triggered in the event the Project fails to meet the threshold. If the Project is not capable of providing its expected benefits, then it is appropriate for the Board to require that it be dismantled and removed from the Project site. The Department recommends an approach similar to that approved by the Board in Docket 6911.²²

If the Project fails to produce at least 65% of the output projected by Deerfield in any consecutive two-year period, then a decommissioning review should be instituted. The specifics of this mechanism as well as the fund itself can be part of a post-certification review process.

In order to insure that the cost estimates used for determining the amounts necessary for the Decommissioning Fund are adequate, the Department suggests that the Board direct Deerfield to provide a detailed study on the cost of removing all project structures and infrastructure as well as the cost of site restoration.

²² See, Petition of EMDC, LLC, d/b/a East Haven Windfarm, for a certificate of public good, pursuant to 30 V.S.A. Section 248, authorizing it to construct and operate a 6 MW wind electric generation facility, and associated transmission and interconnection facilities, in East Haven, Vermont, Docket 6911, Order of July 17, 2006 at 84-85, 105.

Lastly, the Board should make part of any CPG issued in this proceeding, that Deerfield is liable for all costs of decommissioning the Project, and that this liability is not limited to the amounts in the decommissioning fund should the fund prove inadequate for its intended purposes.

The Department recommends the following conditions be included in the event the Board issues a CPG for the Project:

Prior to any Project-related construction activity taking place, Deerfield shall submit for Board review and approval a proposed plan for decommissioning. Such plan shall include a schedule for increases in the fund amount commensurate with the cost of decommissioning the Project at each phase of the construction period. Increases in the fund amount shall occur at a minimum prior to each significant phase of the construction process. The fund shall be fully funded prior to the commencement of construction of the Project. Deerfield shall provide a detailed study on the cost of removing the turbines, all associated infrastructure and restoring the site to its preconstruction condition. Deerfield shall also submit revised calculations for decommissioning both in 2009 dollars and with adjustments for inflation through 2030. The fund must be creditor and bankruptcy remote and must be fully accessible by the Board or its designee to insure that decommissioning takes place as warranted.

At a minimum, the plan must provide for: (i) disassembly and removal of all turbine components and their associated transformers from the site; (ii) disassembly and removal of the collector circuit components from the site, including cutting off all poles at grade; (iii) disassembly and removal of all substation components from the site; (iv) removal of all infrastructure up to a depth of two feet below grade, including foundations; and, (v) regrading to the surrounding contour of any area where subsurface infrastructure has been removed with appropriate seeding and stabilization to allow for revegetation of these areas.

Deerfield's proposal shall also include a proposed process for reporting output of the Project to monitor compliance with the minimum output requirement and a process for decommissioning review in the event the minimum requirement is not met. Parties with standing on the issue of decommissioning shall also be provided a copy of Deerfield's proposed plan and will have an opportunity for review and comment to the Board.

Deerfield shall submit to the Board, for review and approval, any permits, or executed lease agreements with involved landowners (including but not limited to the United States Forest Service) within the Project site. Any such lease agreements may be redacted to protect confidential business information. At a minimum, such permits and/or lease agreements shall contain provisions which ensure that decommissioning can effectively occur in the event of Deerfield's insolvency or dissolution, the revocation of any permit issued to Deerfield, Deerfield's breach of any lease, or an order of the Board requiring decommissioning, and allow access to the impacted land for purposes of fulfilling any CPG condition, including access by representatives of the Department of Public Service, the Board, and the Agency of Natural Resources. Upon approval by the Board a notice of leasehold interest for each lease agreement shall be recorded in the land records of the relevant municipality. Deerfield may not begin significant construction activities prior to Board approval, but may perform site preparatory work such as geotechnical investigations, surveys, light construction, and other similar activities.

Purchase Power Agreements

Findings

130. One of the desirable attributes of renewable power generation is that its output costs are not tied to fuel prices and their accompanying volatility. Without fuel costs such resources are immune to rising and fluctuating fuel prices. These are benefits that accrue only to the owners of the resource unless they are passed on to Vermont ratepayers in the form of stably priced contracts. Agreements or contracts that are stably priced result in economic benefit and promote the general good of Vermont. Thomas pf. at 8-9.
131. Deerfield, through its parent company Iberdrola Renewables is in the process of negotiating a Power Purchase Agreement for a portion of the Project output with Green Mountain Power and as of 12/12/08 these two entities had signed a second

Letter of Intent (LOI) to do so. Exh. DFLD-HCG-9(redacted) and 10
(confidential).

132. The LOI provides proposed terms of a definitive agreement and one of those terms is price stability, which is one of the primary reasons to enter into a power contract. However, at this point in time there is no definitive agreement and under the LOI neither Deerfield nor GMP are under any obligation of any kind. Habig 12/12/08 tr. at 233.

Discussion

The Board should condition any approval of the Project on the requirement that Deerfield sell the Project's output to Vermont utilities at rates, terms and conditions that result in price stability for the purchasing utilities.

Before issuing a CPG for the Project, the Board must determine that its construction and operation will promote the general good of the state. 30 V.S.A. § 248(a)(2).²³ To date, the LOI between Deerfield and GMP does not support such a determination because it is not a definitive agreement.

The Board should require Deerfield to sell a certain percentage of the output from the Project to Vermont's utilities at rates, terms and conditions that result in price stability for the purchasing utilities as a condition of finding the Project will promote the general good of the state.

If the LOI results in a signed Power Purchase Agreement between Deerfield and Green Mountain Power, on terms similar to those contained in Exh. DFLD-HCG-10, the

²³ This requirement is separate from the requirement that the Board make affirmative findings on the criteria listed in subsection (b). See 30 V.S.A. §§ 248(a)(2) and (b).

Department may, after review and analysis, be able to support a finding that the Project would offer Vermont significant economic benefits under 248(b)(2) and would promote the public good of the State pursuant to 248(a).

Accordingly, the Department recommends the following condition be included in the event the Board issues a CPG for the Project:

A minimum of 75% of the project's capacity must be committed to Vermont's retail distribution utilities under long-term contracts with beneficial rates, terms and conditions that result in price stability. Copies of all contracts must be filed with the Board and parties for review and comment prior to any significant construction activities.

Cumulative Impacts

Findings

133. If the Deerfield Project is approved and constructed, it will become part of the visual context against which other future wind generation proposals are evaluated, making it more likely for future projects to pass review under the first prong of Quechee. *Quechee Lakes Corporation*, #3WO411-EB and 3WO439-EB, January 13, 1986.

Discussion

Assuming the Board issues an Order approving the Project, it should do so in a way that preserves its ability to consider the cumulative impacts of all proposed commercial wind generation projects in the surrounding area. In doing so, the Board would preserve its ability to perform a full Quechee analysis of any future projects, including review under prong two of community standards and available mitigation opportunities.

Television Interference

Findings

134. Duncan Cable TV provides service to approximately 2, 800 customers in the towns of Wilmington, Dover and Stratton. DCTV's network operations center or "headend", where it receives its signal for the services it offers, is located 3.5 miles east of the Wilmington village center. Duncan pf. at title page.
135. Concerns were raised that wind turbines have the potential to generate interference with television signals in the area, including Duncan Cable TV's Off Air and Satellite receive site. Duncan pf. at 1-2.
136. Electro-static interference is not a concern. Polisky pf. at 3; Polisky 12/3/08 tr. at 63.
137. Electromagnetic and radio frequency interference will not be an issue if the wind turbine generators meet FCC regulations specifying the limits for interference emissions from electrical devices. Polisky pf. at 4-5.
138. Electromechanical interference conditions, which occur if the wind turbine obstructs the broadcast signal, were studied by Comsearch. Polisky pf. at 4; Chase pf. at 4.
139. The turbines would not affect DCTV's reception of satellite broadcast signals. Polisky pf. at 8; Chase pf. at 6.
140. The Project is not likely to produce noticeable interference for the off-air services DCTV receives. Chase pf. at 6; Polisky pf. at 11.
141. The interference from the Project is estimated to produce no more than 2.5 dB. Exh. DFLD-LP-2 at 6; Chase pf. at 5.

142. The minimum signal level required for low-VHF service is -64.8 dBW. The estimated current signal level at the DCTV site is -53.3 dBW. There is approximately 11.5 dB margin for additional interference. If the interference from the Project is 2.5 dB, then it would reduce the signal from -53.3 dBW to -55.8 dBW, still leaving 9 dB for additional interference. Chase pf. at 5-6.
143. If interference does affect off-air services DCTV utilizes, the interference can be remediated. Chase pf. at 7.
144. Remediating interference is a reactive strategy, and is appropriate because there is a low likelihood that the project will produce noticeable interference and solutions can be adopted promptly if interference does occur. Chase pf. at 8.
145. Options for remediation include: (a) installing larger antennas, (b) installing more sensitive receivers, or (c) installing new facilities to receive services from satellite broadcasts in case terrestrial services are severely degraded. There are also other mechanisms available to deliver required content. Chase pf. at 7.
146. Remediation strategies could be employed within a matter of days to weeks. Chase pf. at 7.
147. The estimated current signal level of -53.3 dBW was produced through calculations, not empirical testing. Therefore, the actual current margin over the required -64.8 dBW may be more or less than the estimated 11 dB. A series of tests can be performed now to establish the actual existing signal strength. This data may be referred to as a "baseline". Without a solid baseline, it would be difficult to determine the extent of the interference caused by the project. Chase pf. at 8.

148. A baseline analysis would be more accurate if conducted prior to turbine construction; the turbines themselves can influence the baseline data. Polisky 12/3/08 tr. at 115-116; Chase 12/3/08 tr. at 168.
149. Mr. Polisky and his firm, Comsearch, made baseline measurements at the Loweville project. Polisky 12/3/08 tr. at 56-57.

Discussion

Duncan Cable TV provides service to approximately 2,800 customers in the towns of Wilmington, Dover and Stratton. DCTV's network operations center or headend, where it receives its signal for the services it offers is located 3.5 miles east of the Wilmington village center. Wind turbines have the potential for interfering with television reception. Studies conducted for the Project, however, indicate that the likelihood is low that the Project will interfere with DCTV's reception of off-air television signals at its headend.

To ensure that the Project does not interfere with DCTV's reception, the Board should impose the following conditions in the event that it grants a CPG for the Project.

Deerfield will conduct a baseline study of television reception at the DCTV headend prior to construction of the turbines. The study should be on par with the Comsearch study performed prior to the construction of the Loweville facility.

Deerfield Wind will remediate any material interference at the DCTV headend facility that is caused by operation of the Project.

Within three weeks of receipt of a complaint, Deerfield will complete an interference measurement study for the DCTV headend facility, and provide a copy of this study to Duncan Cable, the Department of Public Service, and the Board. Deerfield may seek an extension of this timeframe for good cause. If the interference measurement study demonstrates that the Project is causing material interference at the DCTV headend facility, Deerfield will, at the same time, provide a plan and a

schedule to remediate any material interference to DCTV, the Department of Public Service and the Board. Deerfield and DCTV shall make good faith efforts to resolve between themselves any disputes concerning the methodology for investigating or remediating a complaint and the timeframe for completion of remediation. Unresolved disputes may be taken to the Board for resolution.

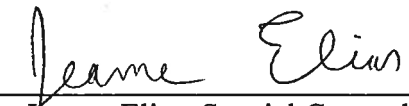
During operation of the Project, Deerfield shall investigate complaints of Project-related interference with television broadcast signals received at any residence. Deerfield will use commercially practicable efforts to remediate material interference experienced at any residence affected by the Project. Deerfield and the affected homeowner(s) shall make good faith efforts to resolve amongst themselves any disputes concerning the methodology for investigating or remediating a complaint, or the timeframe for completion of remediation. Unresolved disputes may be taken to the Board for resolution.

CONCLUSION

If the Board determines that Deerfield has met its burden with respect to the statutory criteria addressed in this Brief, it should do so only subject to the conditions recommended herein.

Dated at Montpelier, Vermont, this 22nd day of January, 2009

VERMONT DEPARTMENT OF PUBLIC SERVICE

By: 

Jeanne Elias, Special Counsel
Laura Scanlan Beliveau, Special Counsel

cc: Service list