

STATE OF VERMONT
PUBLIC SERVICE BOARD

PSB Docket No. 7628

Joint Petition of Green Mountain Power Corporation,
Vermont Electric Cooperative, Inc., and Vermont
Electric Power Company, Inc. for a Certificate of
Public Good pursuant to 30 V.S.A. Section 248 to
Construct up to a 63 MW Wind Electric Generation
Facility and associated Facilities on Lowell Mountain
In Lowell, Vermont and the Installation of approximately
16.9 miles of Transmission Line and associated
Substations in Lowell, Westfield, and Jay, Vermont.

SURREBUTTAL TESTIMONY OF JOHN M. AUSTIN

**ON BEHALF OF THE
VERMONT AGENCY OF NATURAL RESOURCES**

Summary of Testimony

Mr. Austin is a Wildlife Biologist employed by the Vermont Fish and Wildlife Department, Agency of Natural Resources and is stationed in the Barre regional office. The purpose of his testimony is to provide the Department's response to some issues raised by the rebuttal testimony of Mr. Wallin and Mr. Gravel

1 **Q1. Please state your name, place of employment, and position.**

2 A1. My name is John M. Austin. I am a Wildlife Biologist employed by the Vermont Fish
3 and Wildlife Department, Agency of Natural Resources and I am stationed in the Barre
4 regional office.

5

6 **Q2. Have you previously prepared direct testimony in this matter?**

7 A 2. Yes, I prepared direct testimony in this matter on or about October 22, 2010?

8

9 **Q3. Have you reviewed the rebuttal testimony of Petitioners?**

10 A3. Yes, I have reviewed the rebuttal testimony of Jeffery Wallin, Adam Gravel, Ian Jewkes,
11 and Charles Pughe.

12

13 **Q4. Mr. Wallin has revised his “Necessary Wildlife Habitats” inventory map in Pet-
14 JAW-4, what is your opinion of the mapping?**

15 A4. In Pet-JAW-4, Mr. Wallin has provided mapping that quantifies the direct and indirect
16 impacts to bear habitat associated with the proposed project. His calculations indicate
17 that the project will have a direct impact on 20.7 acres of concentrated bear-scarred beech
18 habitat and a total impact of 146 acres that includes both direct impacts and indirect
19 impacts out to ¼ mile. I agree with this impact assessment based on the methods used by
20 Mr. Wallin.

1 **Q5. What is your opinion regarding the proposed mitigation for the project, is it**
2 **adequate to mitigate for any undue adverse effects of the project on bear-scarred**
3 **beech habitat?**

4 A5. No. As I stated in my direct testimony and in response to discovery, the project would
5 eliminate at least 20 acres of bear-scarred beech habitat and indirectly impact 146 acres
6 of bear-scarred beech habitat. Absent adequate mitigation, this impact rises to the level
7 of undue and adverse. The areas of bear-scarred beech habitat that will be impacted by
8 the project as presently proposed will be permanent and therefore, habitat that is
9 conserved to mitigate for those impacts should also be permanent. In order to perpetuate
10 the habitat values being conserved, it is necessary for any easement protecting the
11 conservation of lands to be permanent.

12
13 Kingdom Community Wind has made a good effort to meet the Department's 4:1
14 compensation ratio for habitat mitigation by proposing the conservation of 580 acres of
15 lands (400 and 180 acre parcels) that include areas of bear-scarred beech and wetland
16 habitat. Although Petitioner has not confirmed the actual number of acres of bear-scarred
17 beech in the proposal, Pet-JAW-4 reflects dense areas of bear scarred beech. According
18 to Charlie Pughe, the 400 acre parcel on which there are dense concentrations of bear
19 scarred beech will only be conserved during the life of the project. In addition, there is
20 no certainty that the remaining 180 acres, which contains about 80 acres of BSB, will be
21 permanently preserved. The proposed mitigation is therefore insufficient at this time
22 because it does not provide for the permanent conservation of this habitat. Permanent

1 conservation of the 580 acres, with an appropriate management plan and restricted
2 access, would address the Department’s recommendation for adequate mitigation to
3 offset the impacts from the project on bear scarred beech habitat.

4
5 **Q6. On page 7 of his testimony, Mr. Wallin appears to suggest that the mitigation ANR
6 has requested is duplicative, do you have a response?**

7 A6. The mitigation measures recommended by the Department/ANR are in keeping with past
8 practice of the Department in both Act 250 and Act 248 proceedings, as well as the
9 Department’s draft mitigation guidelines for black bear habitat. (See ANR-JMA-2).
10 These measures are fairly straightforward and include: (1) compensate for unavoidable
11 impacts to the habitat from the project by conserving habitat of similar quality with a
12 conservation easement; (2) develop a management plan for the conserved habitat to
13 ensure that it will be managed to perpetuate the habitat values being conserved; and (3)
14 control or restrict public and maintenance access to the site to reduce on-going indirect
15 impact from disturbance to the habitat.

16
17 I had raised the issue of relocating and removing turbine 15 due to its proximity to some
18 of the most densely concentrated bear-scarred beech associated with the project site. A
19 similar approach was taken in addressing habitat impacts with the Sheffield wind project
20 as a means of reducing impacts to important habitats such as wetlands. In that case,
21 several turbines were eliminated from the project. I have discussed this issue at length
22 with KCW representatives and appreciate their opinions on the number of turbines they

1 believe are necessary to make the project economically viable. Nevertheless, this
2 approach has been applied and used to effectively reduce what proved to be avoidable
3 impacts to significant resources in another wind project which is now under construction.

4
5 Present mitigation calculations, as Mr. Wallin notes, reflect the impacts associated with
6 turbine 15. If turbine 15 were removed or relocated, the Department would reconsider
7 the compensation requirements and likely reduce the number of acres needed to be
8 conserved for impacts to bear-scarred beech bear habitat.

9
10 **Q7. In responding to discovery, Mr. Pughe on behalf of GMP indicates that “its**
11 **proposal is based on a belief that BSB mitigation requirements are for the life of the**
12 **project,” do you agree?**

13 A7. No. By nature, conservation easements are typically executed in perpetuity. It is
14 impossible to perpetuate the habitat values being conserved if the easement is not
15 permanent. The Department has requested perpetual conservation easements in many
16 instances through Section 248 and Act 250 cases for the conservation of necessary
17 wildlife habitat, including concentrated bear-scarred beech and deer winter habitat, as a
18 means of mitigating impacts to those resources. These recommendations are consistent
19 with and informed by our mitigation guidelines. In Deerfield, the Board issued the
20 Certificate of Public Good, on the condition that Deerfield “shall conserve at least 144
21 acres of land that is comparable to the remote, high elevation area of concentrated beech

1 stands” directly impacted by the project. The Board did not limit the period of the
2 conservation easement to the life of the Project.

3
4 Conservation easements for other resource impacts are also in the form of a perpetual
5 easement. In Georgia Community Wind, ANR requested through me and Eric Sorenson
6 a permanent easement for the impacts of the project. The Board ordered a permanent
7 easement for the permanent impacts of the project.

8
9 **Q8. In defending the plan for a temporary conservation easement, KCW appears to rely**
10 **in part on the UPC/Sheffield MOU. Why did the Agency accept a temporary**
11 **conservation easement in Sheffield/UPC?**

12 A8. The Department agreed to a conservation easement on 2700 acres of forested habitat
13 owned by Meadowsend Timber, LLC to off-set relatively modest impacts to some small
14 patches of bear-scarred beech habitat associated with the UPC/Sheffield wind energy
15 project. In that case, the developer had significantly modified its project design and
16 turbine layout to minimize its impact to bear-scarred beech. I estimate, based on the
17 Petitioner’s information, that the project would have resulted in the direct loss of only 20
18 bear-scarred beech *trees* and indirectly impacted roughly 20 acres of bear-scarred beech
19 habitat. Petitioner offered to conserve 2700 acres of unfragmented land where we knew
20 there were several areas of high quality, concentrated bear-scarred beech habitat as well
21 as a broad range of other habitat and feeding opportunities in various degrees of
22 succession.

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The exceptional nature of the mitigation offer in the UPC/Sheffield case justified a deviation from the Bear Mitigation Guidelines. The conservation of 2700 acres offered a unique conservation opportunity on a very large area of remote habitat that supports various types of forest communities, bear-scarred beech habitat and wetlands. The 2700 acres will also be managed in accordance with a habitat management plan that was developed in concert with the Department. The mitigation also included a plan for implementing site restoration measures following decommissioning which shall be reviewed *and approved* by the Department before filing with the Board. The easement for the Sheffield wind energy project extends for the life of the project and beyond through decommissioning and site restoration.

It is unusual for the Department to agree to, or recommend, a limited term easement for mitigation purposes, largely because most of the impacts that we address are permanent in nature. In the Sheffield case, the Department believes that, given the habitat values and large size of the unfragmented land area being set aside, the minor impacts to the habitat from the project, and the safe-guard of requiring full decommissioning and site restoration before releasing the easement were sufficient to mitigate our concerns. As a matter of policy, however, I do not believe that this should be common practice.

Q9. Is the present proposal for a temporary conservation easement appropriate to mitigate for the impacts from the project on the Lowell Mountain site?

1 A9. No. I view the impacts to concentrated bear-scarred beech habitat associated with this
2 project to be significantly greater than those associated with the UPC/Sheffield project.
3 The bear-scarred beech habitat at the Lowell site is far more extensive (146 acres) and of
4 higher value than that found at the UPC/Sheffield site. The acreage provided by the
5 mitigation proposal does not exceed the 4:1 ratio needed under our guidelines to mitigate
6 for the lost habitat or offer other benefits that would make the mitigation exceptional or
7 outstanding. Although I believe it may be possible to mitigate for the effects of the
8 Lowell project on bear-scarred beech habitat, mitigation must include a permanent
9 easement to protect and perpetuate the habitat values being conserved. At this point, the
10 mitigation being proposed is not what I would constitute outstanding mitigation that
11 would justify a temporary easement for the indirect impacts as we had done in the
12 UPC/Sheffield case.

13

14 **Q10. What is your response to Mr. Wallin’s opinion that “areas of indirect impact should**
15 **not be subject to mitigation?”**

16 A10. Mr. Wallin’s opinions regarding mitigation of impacts to black bear habitat are based on
17 his belief that wind energy development does not result in indirect impacts, by way of
18 displacement or disturbance, to black bear access to and use of concentrated feeding
19 habitat. As the Board is aware, the Department and I respectfully disagree with Mr.
20 Wallin’s opinion on this subject. The Department believes the project will result in the
21 displacement of black bears from necessary bear-scarred beech habitat.

22

1 Mr. Wallin's opinion is not supported by scientifically reliable evidence. He relies
2 primarily on his personal observations from infrared cameras and hair snags at the
3 Searsburg wind site. The Department critiqued the Searsburg observations in the
4 Sheffield and Deerfield dockets as scientifically unreliable and failing to demonstrate
5 what effect the wind project has had on bear use of bear-scarred beech habitat. The
6 observations at the Searsburg site are also not predictive of what will happen here
7 because the existing Searsburg project was not constructed within concentrated bear-
8 scarred beech habitat and did not include direct or indirect impacts to concentrated bear-
9 scarred beech habitat. This is an important distinction between that project and the
10 instant case. The size of the existing Searsburg project as well as the small scale of the
11 turbines used at that time is also considerably different from the instant case. There are
12 few, if any, comparable elements between the existing Searsburg project and the
13 proposed project in Lowell. As such, Mr. Wallin's anecdotal observations are
14 insufficient evidence to conclude that bears will not be affected by a utility-scale wind
15 energy facility in general and specifically that they will not be displaced from using
16 important feeding habitats. Rigorous research that provides statistically reliable data on
17 black bear behavior and use of various habitats relative to a wind energy facility is
18 necessary to determine what impact wind energy facilities will have on black bears and
19 their important habitats.

20
21 The Searsburg observations are also not instructive here because the information
22 provided by Mr. Wallin is not compared with pre-construction data. Pre-construction

1 data is essential for making conclusions regarding cause and effect regarding the impacts
2 of a project on wildlife. Mr. Adam Gravel supports this contention in his response to
3 discovery question ANR3-20 where he says, “*studies of the impacts of wind projects on*
4 *breeding bird habitat must contain an assessment of “before” conditions prior to the*
5 *installation of the wind project. If studies were only conducted after installation of the*
6 *wind facility, there would be no understanding of the baseline species composition at a*
7 *site, and therefore no ability to assess impacts. Furthermore, absence of studies*
8 *conducted before construction of a wind facility would not allow for any prediction of*
9 *potential impacts to the species that occur there.*”

10
11 Mr. Wallin and his clients in Sheffield/UPC, Deerfield, and now Lowell, have relied on
12 the Searsburg observations in defending their claims that there would be no displacement
13 or indirect impacts to black bears use of habitat from industrial wind projects. The
14 Department has not found this information useful in determining whether and to what
15 extent black bears will be displaced. Apparently, neither has the Board which recognized
16 the absence of information on the effects of wind projects on bear behavior in its
17 Deerfield decision. Because of the absence of such information, the Public Service
18 Board conditioned its issuance of the Deerfield project, in part, on Deerfield performing a
19 multi-year study to determine the effect of wind projects on bear behavior. “A properly
20 designed and conducted study will provide valuable information regarding the indirect
21 impacts that wind projects will have on bears, information that is currently lacking.”¹

¹ Docket No. 7250 at 77.

1
2 Kingdom Community Wind has an obligation to provide the Board with reliable
3 information that the Project will not result in an undue adverse effect to the natural
4 environment. Kingdom Community Wind has not provided this information. Without
5 specific studies on wind projects, the Department has relied on its own experience and
6 the research it and others have conducted on the displacement effect on black bears from
7 other forms of development. Although there may be some difference in the level of
8 disturbance and displacement from a wind project as compared to other development,
9 neither this developer nor any other developer has presented any scientifically credible or
10 reliable evidence establishing what effect the different characteristics of a wind project
11 will have on bear behavior. Until the Department is presented with scientifically
12 reliable information that proves that an industrial wind project will not displace black
13 bears from bear-scarred beech habitat, the Department will continue its approach of
14 applying a black bear habitat impact assessment protocol that considers both the direct
15 and indirect effects of wind energy development on black bear habitat. After evaluating
16 the Kingdom Community Wind Project under this protocol, the Department recommends
17 that the 146 acres of indirect impacts from the project should be mitigated.

18
19 **Q11. What is your response to the following assertion made by Mr. Wallin on page 2 of**
20 **his rebuttal, “[t]here is no scientific basis for a policy that a ¼ mile area from a wind**
21 **project access road must be surveyed for indirect impact on habitat use by bears,**
22 **and it has never been incorporated into any ANR rule. I am not aware of any**

1 **proceeding in which ANR presented evidence suggesting such an impact for a**
2 **project such as this where human presence will be limited and infrequent after**
3 **construction.”**

4 A11. Mr. Wallin is well aware that the Department, through Forrest Hammond and myself,
5 has testified in other wind projects that bears will be displaced by the activities associated
6 with wind energy development. The Board has made findings in both Sheffield and
7 Deerfield that the project would result in some displacement of black bears from bear-
8 scarred beech habitat.

9
10 The amount of displacement and disturbance may be unknown at this point because wind
11 developers have yet to present any scientifically reliable study documenting whether and
12 what effects a wind project has on black bear access to and use of bear-scarred beech
13 habitat.

14
15 In its evaluation of projects under Act 250 and Section 248 review, the Department
16 applies a ¼ mile zone of influence from a proposed project to significant black bear
17 habitat based on the mitigation guidelines. The Department’s mitigation guidelines rely
18 on a ¼-mile buffer zone to ensure the functional values of concentrated bear-scarred
19 beech habitat. This figure is a function of existing research that examined the influence
20 of human activity and development in proximity to black bears and important habitats.
21 This same figure is used to assess the full measure of impact to concentrated bear habitat.

22

1 These guidelines have been applied since 1993. Mr. Wallin himself has relied on these
2 guidelines in his work for utility wind project developers.

3
4 **Q12. Do you have any response to Mr. Wallin’s claim that the “elevation differential
5 attenuates sight and sound from activity that may occur around the turbine, thus
6 protecting this habitat from any indirect influences from human activity.” (Wallin
7 Rebuttal testimony page 3)**

8 A12. Mr. Wallin suggests that the topographic and elevational differences between bear habitat
9 and turbine 15 will reduce the effects of disturbance to bears that may use that habitat. I
10 agree with Mr. Wallin that elevation, topography and vegetation can function to buffer
11 the effects of noise and other disturbance factors to wildlife using certain habitats. I don’t
12 believe the elevational difference in this particular instance is significant enough to offer
13 a meaningful reduction to the indirect effects of the turbine, road and activities. The
14 turbine site is within the habitat area, not outside of it. Any elevational difference is
15 immediately adjacent to the turbine and access road and will not have a buffering effect.

16
17 **Q13. What is your response to Mr. Wallin’s claims regarding the benefit of edge habitats,
18 (question 7)?**

19 A13. I explained in my pre-filed testimony that the destruction and fragmentation of remote
20 forested habitat along the Lowell Mountain range that would be associated with the
21 proposed project offers no benefits to the wildlife communities of the region. It is
22 unreasonable to suggest, as Mr. Wallin does in response to question 7, that a project of

1 this scale and scope in an environment such as the Lowell mountain range, would
2 actually be beneficial to wildlife overall. This is not something that can reasonably be
3 compared to timber harvest activities. This project involves extensive, wide, permanent
4 roads, concrete pads, and large turbines, as well as the permanent, on-going presence of
5 people to maintain and operate the facility. This is not something to be compared to the
6 small meadow habitat on the Wild Branch WMA, as suggested by Mr. Wallin. The
7 meadow in that case adds habitat diversity to a suite of habitat conditions that are not a
8 function of road and energy development. The presence of machinery and people in-and-
9 of-itself distinguishes a project of this nature from other types of habitat changes and
10 fragmentation. This is fragmentation and permanent loss of habitat associated with large-
11 scale commercial energy development, not a patch cut in a forest to enhance habitat for
12 ruffed grouse and American woodcock.

13
14 **Q14. Petitioners have offered to conserve the Villeneuve parcel and appear to suggest that**
15 **it will mitigate for the impacts to black bear and other wildlife, what is your**
16 **evaluation of the Villeneuve parcel as mitigation for bear-scarred beech habitat**
17 **impacts?**

18 A14. I have not been on the so-called Villeneuve parcel that Kingdom Community Wind
19 proposes to use for purposes of mitigation. Based on the information provided by Mr.
20 Wallin regarding the habitat characteristics of the site, I have no reason to doubt that it
21 provides some useful habitat for black bears because it is represented to contain remote
22 forested habitat with wetlands. I do not believe it is suitable habitat for mitigation of

1 impacts to concentrated bear-scarred beech habitat because it does not have those
2 characteristics at this time. Mitigation for specific habitat conditions impacted, such as
3 concentrated bear-scarred beech habitat, should be compensated with habitat of the same
4 kind that is of similar character and quality. So, while the conservation of this piece of
5 property may have some useful benefits such as recreational benefits for the Green
6 Mountain Club, and broad ecological values, it does not appear well-suited for mitigation
7 of impacts to the type of bear-scarred beech black bear habitat affected by the project.
8 We have had productive discussions with KCW regarding the Agency's interests in
9 mitigation for broader fragmentation impacts. Mr. Sorenson elaborates on this matter in
10 his surrebuttal testimony. The purpose for off-site mitigation is to find a way to off-set
11 the broader habitat fragmentation effects of the project. In order to accomplish that, it is
12 important to conserve land in areas that provide habitat connectivity within the Lowell
13 mountain range. Department staff identified several areas that would be well suited for
14 this purpose and we have shared this information with KCW and have offered to assist in
15 the pursuit of the conservation of these areas as needed.

16
17 **Q15. Do you have any additional response to Mr. Gravel or Nelson's testimony?**

18 A15. My colleague Eric Sorenson has addressed issues regarding forest habitat fragmentation
19 raised in the rebuttal testimony of Mr. Gravel and Mr. Nelson and I concur with his
20 opinions.

21

1 I would also add to Mr. Sorenson's surrebuttal testimony that, in terms of Mr. Gravel's
2 comparison of a wind energy project along a remote, forested ridgeline to timber harvest
3 activities, again, this is a wholly unreasonable comparison for the reasons I cite in my
4 response to the question above as well as in my pre-filed testimony. Mr. Gravel indicates
5 that, although some studies on the fragmentation effects of wind energy development on
6 forest interior birds show impacts such as increased rates of nest parasitism and
7 predation, and a subsequent effect on reproductive success, that most of these studies are
8 inconclusive. There is an abundance of scientific literature on the subject of forest
9 habitat fragmentation on forest-interior songbirds that distinguish between the more
10 temporary effects of timber harvest activities and forest management versus the
11 development of roads and commercial infrastructure. Mr. Gravel references several
12 sections from the publication I relied on in my testimony (Kerlinger 2002) that all
13 illustrate the impacts of habitat fragmentation on forest-interior songbirds. Indeed, this
14 publication provides some useful information on the effects of wind energy development
15 on forest-interior songbirds. Mr. Gravel suggests that, although some birds may be
16 displaced by the project, they may shift their breeding territories to other locations not
17 impacted by the project, or they may attempt to reneest in other areas. This assumes that
18 there is unoccupied habitat that is available to those individuals once they have been
19 displaced by the project. It does not account for the permanent impact of the roads and
20 turbines and their potential long-term displacement effect. Mr. Gravel again
21 characterizes all timber harvesting as clear cutting. I have worked with the Vermont
22 Department of Forests, Parks and Recreation and the Vermont Forest Products industry

1 for many years and would not characterize the preponderance of timber harvest activities
2 as falling into the clear cutting category. In fact, most timber harvesting in Vermont is
3 done by selective harvest in various forms. While large-scale clear cuts can have some
4 temporary fragmentation effects on birds and some mammals, this is not typical of
5 Vermont forests. The literature relied on by Mr. Gravel and myself regarding the effects
6 of timber harvesting on forest-interior birds, indicates that the effects of timber harvest on
7 birds is temporal; that is, it is not permanent, and is a function of revegetation which
8 begins as soon as the timber harvest is complete. The science on fragmentation from
9 roads and development and human activities indicates that the effects are more far
10 reaching and permanent. Finally, Mr. Gravel equates the regeneration of vegetation on a
11 wind energy site after the project life of 20 years has run its course to that of 20 years of
12 forest regeneration following a timber harvest. Again, the two are not comparable. First,
13 there is no guarantee that after 20 years, the project will be decommissioned. Second,
14 once the project is complete and decommissioning begins, it will take decades to restore
15 natural vegetation to the site that begins to resemble what was present prior to the project.
16 Successful decommissioning and site restoration has not been successfully demonstrated
17 for a wind energy project in this sort of environment – to my knowledge – and there are
18 many broad assumptions or leaps of faith that must be made to consider to what extent it
19 is possible. I respectfully disagree with Mr. Gravel on his points regarding fragmentation
20 from this wind energy project and maintain that this project will indeed present
21 significant fragmentation impacts to the natural environment of this ridgeline and the
22 wildlife that rely on it.

1 **Q16. Does this conclude your testimony at this time?**

2 A16. Yes.

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