

1 THE STATE OF NEW HAMPSHIRE  
2 BEFORE THE  
3 NEW HAMPSHIRE  
4 SITE EVALUATION COMMITTEE

5  
6 DOCKET NO. 2008-

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8 APPLICATION OF GRANITE RELIABLE POWER, LLC  
9 FOR CERTIFICATE OF SITE AND FACILITY  
10 FOR GRANITE RELIABLE POWER WINDPARK  
11 IN COOS COUNTY

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14 TESTIMONY OF PHILIP BEAULIEU  
15 ON BEHALF OF  
16 GRANITE RELIABLE POWER, LLC

17 July 2008

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20 Qualifications of Philip Beaulieu

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22 **Q. Please state your name and business address.**

23 A. My name is Philip Beaulieu. My business address is Horizons  
24 Engineering, L.L.C., 34 School Street, Littleton, New Hampshire, 03561.

25 **Q. Who is your current employer and what position do you hold?**

26 A. I am employed by Horizons Engineering, L.L.C. ("Horizons"). In my  
27 present position I am a project manager for the company.

28 **Q. What are your background and qualifications?**

29 A. I have more than 7 years of experience in the civil engineering field. I  
30 have been employed at Horizons since April 2004, and am currently a licensed  
31 professional engineer in the State of New Hampshire. I hold a Bachelor of Science  
32 Degree in Civil Engineering from Merrimack College.

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**Purpose of Testimony and Overview of the Project**

**Q. What is the purpose of your testimony?**

A. The purpose of my testimony is to describe the design and construction of Granite Reliable Power, LLC's ("GRP") wind power project in Coos County ("the Project"). I will also discuss the Project's impacts on water quality and the proposed mitigation of those impacts. In addition, I will discuss the Project's impacts on public health and safety during the construction phase.

**Q. Are you familiar with the Project that is the subject of this Application ?**

A. Yes, I am. In my role as a consultant I have been involved in the planning for this Project and have visited the site on numerous occasions. On a going forward basis I will be involved in various aspects of the Project, including survey, civil design and permitting of the access roads, laydown, substation, and switchyard areas, transmission corridors, and turbine sites, and construction layout.

**Q. Please describe the design of this Project.**

A. The Project consists of the construction of 33 wind turbines, each with a capacity of three megawatts. The turbines will be located on three separate and distinct ridgelines, in the Phillips Brook and Clear Stream watersheds, identified as Dixville Peak, Owlhead Mountain, Mount Kelsey, and Fishbrook Ridge. In order to access the proposed turbine locations, approximately 19 miles of existing gravel logging roads will be utilized and approximately 12 miles of new roads will be constructed. The existing roads must be upgraded to access the turbine sites with turbine component transport and construction vehicles. Roadway horizontal and vertical geometry alignments were

1 designed to maximize the use of existing alignments and minimize environmental  
2 impacts and costs associated with construction of new roads.

3 **Water Quality Impacts**  
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5 **Q. Please describe what consideration has been given to water quality**  
6 **issues.**

7 A. The Project will require permits including, among others, a NHDES  
8 Alteration of Terrain Permit, a NHDES Wetlands Bureau Dredge & Fill Permit, an Army  
9 Corps Section 404 Permit, and an Environmental Protection Agency National Pollution  
10 Discharge Elimination System Construction General Permit. In addition, as part of the  
11 Army Corps permit process, the Project will require a Section 401 Water Quality  
12 Certification. The permit process will require development of comprehensive plans to  
13 address potential construction-related impacts as well as an evaluation of the effects of  
14 the Project after construction and a plan to address the same.

15 **Q. Have you studied the water quality impact this Project will have ?**

16 A. Yes. This Project differs from many development projects in that the  
17 intensity of use after construction is expected to be quite light. The turbines are designed  
18 to be efficient and reliable and can be remotely monitored for health and performance.  
19 Access to the site(s) after construction will only be required for periodic and infrequent  
20 maintenance. There is expected to be impact during construction for upgrade of the  
21 existing roadways to accommodate access and construction of the new access roads,  
22 laydown area, switchyard, substation, and turbine sites.

23 **Q. What steps will GRP take to mitigate the water quality impact of the**  
24 **Project ?**

1           A.     GRP will take a number of steps to reduce and mitigate water quality  
2 impacts associated with the Project. Initially, the Project included turbine strings along  
3 the ridgelines on the western border of the Phillips Brook watershed. These turbine  
4 strings have been deleted from the Project as they would have necessitated more  
5 roadways and a number of crossings of Phillips Brook for access roads and power lines.

6           The Project site has historically been an industrial forest and because of  
7 this historic use, the site is laced with a large network of logging roads, many of which  
8 are still actively used. To the extent practicable, the Applicant proposes to re-use these  
9 roads for access to the proposed turbine sites. In doing so, the disturbance area and  
10 number of new wetland and stream crossings is vastly reduced. The width and length of  
11 proposed roadways will be kept to a minimum to reduce impacts during and after  
12 construction.

13           Finally, the Applicant will employ erosion control measures including the  
14 use of silt fence, rock check dams, erosion control matting, stump grindings and  
15 temporary and permanent sedimentation traps during and after construction.

16           **Q.     In your opinion will this Project have an unreasonable adverse effect  
17 on the natural environment, more particularly water quality ?**

18           A.     The Project has been designed to minimize and mitigate adverse water  
19 quality impacts. With judicious use of temporary and permanent erosion control  
20 measures, in my opinion the Project will not have an unreasonable adverse effect on  
21 water quality.

22           **Public Health and Safety During Construction**

23           **Q.     Please describe how the construction phase will be handled.**  
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1           A.     GRP will retain a general contractor who will have overall responsibility  
2 for construction of the Project in accordance with the plans and technical specifications  
3 prepared by Horizons Engineering (and other consultants) and in accordance with all  
4 applicable codes, standards and permit conditions. Horizons Engineering will provide  
5 construction services to the Applicant through the construction process to ensure the  
6 work is completed in substantial conformance with the approved plans, to: interpret the  
7 design intent; provide resident inspection of the work; and ensure that permit conditions  
8 are met.

9           **Q.     Please describe the construction schedule.**

10          A.     At this time, the construction schedule anticipates that the access roads,  
11 switchyard, laydown area, overhead and underground power, and turbine sites will be  
12 constructed in 2009, with turbine delivery and installation scheduled for 2010. The work  
13 is expected to begin with upgrade of the existing access roads and clearing and grubbing  
14 of the switchyard and laydown/substation area. The work will progress to the new  
15 roadways as access is achieved. The intent is to complete the site work in 2009, with  
16 manpower and equipment effort varying depending on progress.

17                 Turbine delivery is currently anticipated in the spring of 2010. Turbine  
18 foundation design will require detailed geotechnical investigation, including soil borings,  
19 at each turbine site. Because access to the turbine sites will not be possible until the  
20 access roads have been constructed and the turbine sites have been brought to rough  
21 grade, we anticipate that foundation design will occur over the winter of 2009/2010 and  
22 the foundations will be constructed in early 2010 in time to cure and receive the turbines.

1           **Q.     Please describe how the turbine components are transported to the**  
2 **site?**

3           A.     Because of the size of the turbines, components are shipped separately and  
4 assembled on site. Turbine blades, nacelles, and tower sections will be transported by  
5 ship and transferred to rail or over-the-road haulers for delivery to the site. Components  
6 will be dropped either at the lay down area, or preferably scheduled for immediate  
7 delivery to the turbine sites. Specialized hauling vehicles will be used for over-the-road  
8 and on-site transportation. Assembly of the turbine components will occur at each  
9 turbine site at the time of installation.

10          **Q.     In your opinion will this Project have an unreasonable adverse effect**  
11 **on public health and safety, particularly during the construction phase?**

12          A.     Contractors and consultants working on the site will be required to abide  
13 by applicable health and safety regulations. The Project is located in a very remote area  
14 where public access can be limited at any time. Restrictions on access will be employed  
15 to ensure that the public is not exposed to health and safety hazards associated with  
16 construction including construction vehicle traffic, blasting, etc. In my opinion this  
17 Project will not have an unreasonable adverse effect on public health and safety during  
18 the construction phase.

19          **Capability to Construct the Project**

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21          **Q.     Please describe the capability of Noble and GRP to construct and**  
22 **operate this Project.**

23          A.     Noble Environmental Power has constructed over 188 turbines across  
24 New York State totaling 292 megawatts of clean renewable energy. By the end of 2008,

1 Noble is scheduled to have a total of 633 megawatts of power online in New York State,  
2 making it New York's largest wind developer. In all, these projects represent a total  
3 investment of approximately \$1.3 billion in the state's renewable energy infrastructure.  
4 In addition, Noble has projects under construction in Texas and Michigan. Horizons will  
5 be acting as the Owner's Engineer, to ensure that the construction of the Project reflects  
6 the design and adheres to the applicable permit conditions for this Project.

7 **Q. Are there any other comments you would like to make at this time ?**

8 A. No.

9 **Q. Does this conclude your pre-filed testimony?**

10 A. Yes.

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