STATE OF VERMONT
PUBLIC SERVICE BOARD

Petition of Georgia Mountain Community Wind, LLC for a Certificate of Public Good, pursuant to 30 V.S.A. § 248, authorizing the construction and operation of a 5 wind turbine electric generation facility with associated electric collection and interconnection facilities on Georgia Mountain, in the Towns of Milton and Georgia, Vermont, to be known as the "Georgia Mountain Community Wind Project"	)	Docket No. ____

PREFILED TESTIMONY OF JEFF GRUVER

ON BEHALF OF GEORGIA MOUNTAIN COMMUNITY WIND, LLC

March 26, 2009

Mr. Gruver's testimony introduces his Bat Acoustic Studies Report prepared for the proposed Georgia Mountain Community Wind Project.

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ON BEHALF OF
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1. Introduction

Q1. Please state your name, business address and employment.

A1. My name is Jeff Gruver. I am a Research Biologist of the Western EcoSystems Technology, Inc. ("WEST"), a Consulting firm with a principal address at 2003 Central Avenue, Cheyenne, Wyoming.

Q2. Please describe your educational background and professional experience.

A2. I received a M.S. degree in Zoology & Physiology from University of Wyoming in 2003. I joined **W**estern **E**co**S**ystems **T**echnology, Inc. (WEST) in March 2007. West is nationally recognized as a leading wind energy consulting firm and has over 13 years of experience in the field of wind energy permitting, impact assessment and monitoring. WEST has participated in the development and

assessment of well over 150 wind energy projects in over 20 states from coast to coast, including an offshore project, projects in Canada and Nicaragua, and projects in Pennsylvania, New York, and Maine. Our office headquarters is in Cheyenne, Wyoming and WEST maintains satellite offices across the US in Washington, California, North Dakota, Vermont and Indiana.

WEST has played a leading role in understanding, assessing, and placing into perspective the impacts of wind-energy facilities on wildlife and habitat using scientifically credible and defensible risk assessment, monitoring and research methods. WEST has successfully worked with all stakeholders involved in dealing with these technical issues, including wind energy developers, state and federal natural resource agencies, permitting agencies, and environmental groups. Several WEST employees are members of the National Wind Coordinating Collaborative (NWCC) Wildlife Working Group, which is a group comprised of various stakeholders formed to address siting and other issues related to wind energy and wildlife.

WEST has prepared numerous site characterization reports for wind projects in the U.S. WEST has also provided the following services at wind-energy facilities throughout the U.S.: bird, bat, wildlife, vegetation, and wetland surveys; risk and impact assessments; wetland assessments and delineations; threatened and endangered species reviews; ecological study plans; ecological studies; mitigation

and monitoring plans; monitoring and research studies; Habitat Conservation Plans (HCP); fatal flaw analysis; statistical analysis; GIS mapping; Conditional Use Permit Applications (CUP); Environmental Impact Statements (EIS); Environmental Assessments (EA); Biological Assessments (BA); US Fish and Wildlife Service consultation; expert testimony at permitting hearings; and wind turbine siting.

WEST's staff are routinely invited to give presentations at national and regional workshops and meetings related to wind energy and its affect on wildlife and habitat. WEST's staff have published several wind power related articles in peer-reviewed scientific journals and books. For more information on our company's qualifications, please visit our website at www.west-inc.com. My full resumé is provided as Exhibit Petitioner JG-1.

2. Summary of Assessment and Conclusion

Q3. What is the purpose of your testimony?

A3. The purpose of my testimony is to describe and introduce the Bat Acoustical Studies Report that I prepared for the Georgia Mountain Community Wind Project ("GMCW Project" or "Project"). My report is included with my testimony as Exhibit Petitioner JG-2.

Q4. Please describe the studies that you conducted and summarize your findings.

A4. Vermont Environmental Research Associates ("VERA") requested WEST to develop and implement a standardized protocol for baseline studies of bat use in the Project area for the purpose of estimating potential impacts of the proposed wind-energy facility upon bats. The protocol for the baseline study is similar to protocols used at other wind-energy facilities in the United States, and follows both published guidelines (Kunz et al. 2007a) and guidance provided by the Vermont Fish and Wildlife Department. The protocol included passive acoustic sampling to quantity bat use of the area using 5 Anabat® bat detectors placed at 3 locations within the study area and at 2 vertical strata. The details are included in my report, Exhibit Petitioner JG-2.

We initiated surveys in July 2008 designed to assess bat use within the proposed Georgia Mountain Community Wind Project, Chittenden County, Vermont. Acoustic surveys for bats using Anabat SD1™ ultrasonic detectors at 3 ground-based stations and 2 vertical strata were conducted from July 1 to October 31, 2008. The objective of the surveys was to estimate the seasonal and spatial use of the study area by bats, as well as to estimate total bat activity, defined here as number of bat passes. In total, 2203 bat passes were recorded during 451 detector nights. Averaging bat passes across locations, we detected a mean of 4.9 bat passes per detector-night, with a range of 1 to 12.5 passes per night. Total bat activity peaked in early August and no passes were recorded after October 8. Bat activity appears to have come predominately from *Myotis* bats, as 86.1% of calls

were > 35 kHz (e.g., *Myotis* bat species). Calls that were < 35 kHz in frequency (e.g., big brown bat, silver-haired bat and hoary bat) comprised 13.9% of recorded activity. Bats with echolocation calls in the < 35 kHz range, especially silver-haired and hoary bats, have comprised the majority of fatalities at other wind power projects, though red bats, whose calls typically are > 35 kHz, have predominated fatalities at some eastern wind energy projects. Identification of bat passes to species was possible for the hoary bat and red bat. Calls attributable to big brown and silver-haired bats were combined, as they are too similar to differentiate. Hoary bats accounted for 56% of low-frequency passes and 8% of all passes, while red bats comprised 4.8% and 4.1% of high-frequency and total passes, respectively. Calls from the big brown/silver-haired complex accounted for 44% of low-frequency passes and 6.1% of all passes. Detection rates for hoary and red bats were highest in mid- to late-July, suggesting possible migration through the study area during this period. A smaller spike in hoary bat detections, accompanied by similar increases in red and big brown/silver-haired bat detections, occurred in early September suggesting a second, somewhat smaller wave of migration.

The mean number of bat passes per detector per night was compared to existing data at five wind energy facilities where both bat activity and mortality levels have been measured. The level of bat activity documented at the Georgia Mountain Wind Project was higher than that at wind facilities in Minnesota and

Wyoming, where reported bat mortalities were low, but was lower than at facilities in the eastern and Midwestern US, where reported bat mortality has been highest. Assuming that the general relationship between bat activity and bat mortality observed at these five sites is broadly applicable to other sites, we expect that bat mortality will be on the lower end of the spectrum and on par with others from the region.

Q6. Does this conclude your testimony?

A6. Yes.