



January 16, 2013

Mr. Erle Townsend
Project Manager
Maine Department of Environmental Protection
17 State House Station
Augusta, ME 04333-0017

Subject: **Canton Mountain Wind Project, Application L-25557-24-A-N/L-25558-TB-B-N**
Scientific Evaluation of Maine Department of Inland Fisheries and Wildlife's
March and December 2012 Comments on Canton Mountain Wind Project

Dear Mr. Townsend:

Tetra Tech has reviewed the Maine Department of Inland Fisheries and Wildlife's (MDIFW's) March 2012 and December 6, 2012 comments on Patriot Renewables' (Patriot's) Canton Mountain Wind Project (Project) and offers the following response to MDIFW's recommendations.

While it remains unclear whether the curtailment recommended by MDIFW is biologically necessary or supported by available science, out of an abundance of caution Tetra Tech recognizes that operational curtailment could result in a marginal reduction in bat mortality. We do not believe that increasing the cut-in speed of all turbines at Canton Mountain Wind for six months out of the year (from April 20th to October 15th) is supported by the 2010 site-specific bat surveys at the Project site, previously conducted curtailment studies at operating wind projects, and bat mortality trends at existing wind projects in Maine. However, Tetra Tech does recommend based on the best available science, a more targeted operational curtailment protocol, as detailed below.

During the 2010 acoustic surveys at the Project site, overall activity (measured by total call sequences recorded, as well as total count of 1-min intervals with bat activity) peaked on June 21 (Summer/Fall 2010 – Bird and Bat Biological Survey Report for Canton Mountain Wind). No bat activity was recorded before April 20 or after October 14; there was little activity before mid-June (11.5% of overall activity) and in September and October (7.7% of overall activity). We recognize there is some regional variability in the timing of bat migration and activity; however, studies have demonstrated that fatalities at wind projects are lowest during the spring, early summer, and late fall periods (Baerwald et al. 2009, Stickland et al. 2011). Rigorous evaluation of the efficacy of operational curtailment by Arnett et al. (2011) revealed that mortality was reduced primarily during late-summer and early fall. Post-construction monitoring studies from Maine and northern New York indicate that bat fatalities in the region are also highest from mid-July to late-August (Arnett et al. 2008, Stantec 2008, Jain et al. 2009, Stantec 2009a, Stantec 2009b). The majority (95%, n = 20) of bat mortality documented at Maine wind projects has occurred during the summer and fall, specifically June 29 – September 21 (Stantec Consulting 2008, Stantec Consulting 2009a, Stantec Consulting 2009b). To our knowledge there is only one record of spring time (May 12) fatality (4.8% of overall bat mortality recorded at Stetson 2009 and Mars Hill 2007 and 2008) of a bat species at a Maine wind project (Stantec Consulting 2008).

Tetra Tech maintains that increasing cut-in speeds for the entire six month period from April to October at Canton Mountain Wind is not supported by site-specific bat surveys and the currently available science. However, Patriot remains committed to minimizing impacts to bat populations and, in response to MDIFW's request for operational curtailment, Patriot proposes to increase turbine cut-in speeds from 3 meters per second (m/s) (6.7 mph) to 5 m/s (11.2 mph) at all turbines from June 1 – September 15, from one half-hour before sunset to one-half hour after sunrise, when ambient air temperatures are greater than 38 degrees Fahrenheit (3° C). Recent research has shown that mean wind speed and mean ambient temperature have the greatest effects on bat activity patterns, and that bat activity is generally lower at low mean nightly temperatures, and wind speeds above 5 m/s (Weller and Baldwin 2012). This proposed protocol would curtail turbine operations during those periods when bats would likely be at the greatest risk.

We understand and share MDIFW's concerns about declining populations of *Myotis* and other bat species. We also understand that these concerns warrant precaution when evaluating potential impacts to bats; however, Tetra Tech maintains that the results of post-construction monitoring studies, from Maine in particular, do not warrant blanket curtailment across the entire warm period. Patriot has agreed to targeted curtailment during the peak bat activity period, from June 1 – September 15, within the specific meteorological parameters detailed above. We would be pleased to work further with MDIFW to refine the post-construction monitoring and bat conservation plan for the Canton Mountain Wind Project.

Respectfully Submitted,

TETRA TECH, INC.



Aaron Svedlow

Wildlife Biologist

cc: Mr. Todd Presson, CEO Patriot Renewables
Mr. Andy Novey, Project Manager, Patriot Renewables
Ms. Lindsay Galbraith, SRW Deputy Project Manager
Ms. Kathleen R. Miller, Tetra Tech Project Manager
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Mr. Derek Hengstenberg, Tetra Tech Wildlife Biologist

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