STATE OF MAINE
LAND USE REGULATORY COMMISSION

HEARINGS ON PROPOSED RULE	)
2009-P328 TO EXPAND THE	)
EXPEDITED PERMITTING AREAS	)
UNDER 35-A M.R.S.A. §3453	)

TESTIMONY OF RUFUS E. BROWN, ESQ.
ON BEHALF OF FRIENDS OF MAINE'S MOUNTAINS

INTRODUCTION

Friends of Maine's Mountains ("FMM") submits the following testimony on the Petition to Initiate Commission Rulemaking to Add to the Windpower Expedited Permitting Area submitted by TransCanada in June 2009 (the "Petition") to the Land Use Regulatory Commission ("LURC") to adopt a Proposed Rule 2009-P328. The Petition is filed pursuant to 35-A M.R.S.A. §3453, which delegates to LURC the authority to add to the Expedited Permitting Area by rule if it determines that the proposed addition:

1. **Geographic extension**: Involves a logical geographic extension of currently designated permitting area;

2. **Meets state goals**: Is important to meeting the state goals for wind energy development established in Section 3404; and

3. **Principal values and goals**: Would not compromise the principal values and goals identified in the comprehensive land use plan adopted by [LURC].

I. FRIENDS OF MAINE'S MOUNTAINS

FMM is a newly organized (2009) entity, based in Wilton, Maine, devoted to protecting the mountain regions of Maine from various threats to their natural and human environments. At this time, FMM believes that the most pressing threat to both natural and human values in the area is the inadequately controlled development of wind power plants on mountain ridges and close to the small towns that embody the qualities of life that Maine should protect. The principal

activities of FMM have been efforts to educate the public about wind power, and to support grass roots opposition to inappropriately sited projects. FMM is concerned that the expansion of the Expedited Permitting Area on Sisk Mountain, which stands above the beautiful Chain of Ponds, will lead to an unwarranted industrial intrusion into that wild and much beloved area.

II. THE CHAIN OF PONDS AREA

The Petition requests a rule expanding the Expedited Permitting Area into Chain of Ponds in Western Maine. This township, with its lakes and mountains, possesses an extraordinary beauty. The Chain of Ponds itself, consisting of five spectacular, connected (the "chain") deep mountain ponds that resemble fjords, is hemmed in on both sides (east and west) by steep mountains rising hundreds of feet more or less straight from the water. LURC's List of Lakes Showing Wildlands Lake Assessment Findings classifies the Chain of Ponds as Management Class 2, resource class 1A "accessible, undeveloped lakes with exceptional values." LURC Regulations, Chapter 10, Appendix C.

One of the mountains that frame the chain on the east is Sisk, whose summit and high ridge can be seen from many places on the ponds. The ponds themselves are extremely deep (maximum depth 106 feet) and contain large populations of naturally reproducing brook trout and land locked salmon. LURC 's Decision on the Kibby Project (5 March 2008) describes the ponds as accessible and undeveloped lakes "with outstanding fisheries, wildlife, scenic and physical values and significant shore and cultural character" (pg. 2 of 79).

In the western part of the township is Snow Mountain, whose summit (3,960 feet) is in Alder Stream Township to the south, whose north ridge slopes majestically down for three miles or so into Chain of Ponds west of the ponds themselves. Snow is a major mountain, only 50 feet lower than Redington, whose Alpine ecology was held by LURC to be too fragile and important

to be sacrificed to a wind plant. Snow is listed in Wikipedia as one of the "New England Fifty Finest" climbs.

The only public road in Chain of Ponds Township is State Route 27, which has been cut out of the mountains (including Sisk) on the east side of the Ponds and parallels the ponds for about five miles. Route 27 is a major entryway into Maine from Canada (at Coburn Gore) and has been declared a State Scenic Highway. Any wind plant on Sisk would probably be visible from several points along this Scenic Highway. Chain of Ponds is relatively well known and frequented by tourists. The Arnold Trail, which represents an effort to record the route that Benedict Arnold and his army took from Augusta to Quebec in 1775, passes through Chain of Ponds. A wind plant on Sisk would almost certainly be visible from this trail.

III. THRESHOLD ISSUES

Before addressing the merits of the proposed rule, there are three threshold issues that should be considered in relation to the rulemaking.

A. Constitutional Objections.

As a threshold matter, FMM objects to the rulemaking on the grounds that the delegation to LURC of the power to expand the Expedited Permitting Area resulting in significant reductions in the environmental protection of the areas of the state so designated constitutes a violation of Separation of Powers provisions of the Maine Constitution and the Equal Protections Clause of the United States Constitution. The first sentence of the Guidance Document under Criterion 1 acknowledges this concern to a limited extent; FMM's view is that the concern applies to the entire issue of LURC approved expansions. In addition, the position of FMM is that even if the delegation is constitutional, it must be accompanied by specific guidelines, which was not done by the Legislature and that this issue of overly broad legislative delegation to

LURC is exacerbated if LURC proceeds without binding rules promulgated in accordance with the Maine Administrative Procedure Act, 5 M.R.S.A.§8001, et seq. This point was emphasized in the recent case of *Uliano v. Board of Environmental Protection*, 2009 ME 89. 977 A.2d 400. Moreover, even the Guidance Document gives no actual structure the Criterion 3, which incorporates sweepingly broad principal values and goals of CLUP without giving any path of resolving the conflicts in these values and goals between development of windpower energy and preservation of pristine natural resources.

B. Objections Based on the Revised Proposed Rule.

In the Petition that started these rulemaking proceedings, TransCanada proposed an expansion of *630 acres* to accommodate a *proposed project of approximately 15 turbines*. Petition at 3. Since that time, by letter dated November 9, 2009 (attached as *Exhibit A*), TransCanada announced that it abandoned the proposed project, deciding to build it all on the expedited side of Sisk Mountain. Now there is no proposed project for the proposed expedited permitting area. (See email from Juliet Brown, Esq., dated March 9, 2010, attached as *Exhibit B*). Now, just one week before the scheduled hearings, TransCanada has submitted a "Supplement to Petition" changing the configuration of the proposed expansion to 156 acres with additional materials submitted in support of its Revised Petition. FMM objects to proceeding on the Revised Petition because it conflicts with the Petition and proposed rule that was described in the Notice of Agency Rulemaking (attached as *Exhibit C*). Section 8052.5 of the Maine Administrative Procedures Act, 5 M.R.S.A. §8001, et seq. provides that "A rule may not be adopted unless the adopted rule is consistent with the terms of the proposed rule, except to the extent that the agency determines that it is necessary to address concerns raised in comments about the proposed rule, or specific findings are made supporting changes to the proposed rule."

The exceptions do not apply. Therefore, this proceeding must be re-noticed to comply with the Maine APA. There is prejudice to the public from proceeding on the Revised Petition. Among other things, the Revised Petition purports to provide exhibits on the visual impact of development of the proposed expedited area. Those interested in the proceedings do not have sufficient time before the hearing to determine the extent to which these visual exhibits are accurate or representative.

C. Objections Based on the Absence of a Proposed Project.

Now that TransCanada has withdrawn the proposed project for the proposed expansion of expedited permitting area, LURC should not act on the Petition or the Revised Petition. First of all, there is no need to act if there is no proposed project. In the absence of a need, LURC should implement suggestions made in the process of developing the Guideline Document to inventory and rate the limited mountain resources as an aid to decision making when LURC is petitioned to degrade such resources in the name of windpower development. In the Memorandum dated February 22, 2010, Planning Division Manager Samantha Horn Olsen indicated that this suggestion had merit, but "would not be applicable to petitions that the Commission would receive in the short term." Now that there is no proposed project to consider, there is no need to sacrifice sound decision making tools because of pending petitions.

In addition, The Guidance Document that LURC has worked on to assist it in its deliberations requires that a proposed project must accompany a petition. Under the heading, "Interpreting the Statutory Criteria", the Guidance Document states that "[w]hile specific project design and layout is not required for this rulemaking process, *generalized information about the impact area of the proposed project will be necessary*." [Emphasis added.] Under Criterion 1, the Guidance Document states that "[i]n general, the Commission will expect that a substantial

portion of a proposed project will lie within the area originally designated as expedited by the Maine Legislature." Under Criterion 2, the Commission contemplates evaluating the potential for energy generation in comparison to impacts on the public resources from a "proposed project." Under Criterion 3, the Commission is expected to "determine how the *proposed project* would generally affect existing uses." [Emphasis added.]

In summary, this rulemaking should not proceed until there is a proposed project that can be evaluated.

III. OBJECTIONS BASED ON CRITERION 1: Geographic extension. Involves a logical geographic extension of currently designated permitting area.

The Guidance Document warns against use of the rulemaking process to accomplish "leapfrogging." Yet that is what TransCanada is attempting to do indirectly in this case. TransCanada has pending before LURC an application for a development permit (DP 4860) to build a grid scale wind turbine project on the north end of the Sisk Mountain range in the existing Expedited Permitting Area referred to as the "Kibby Extension." This application is justified in substantial part by the claim that an encroachment into the scenic Chain of Ponds area should be allowed to take advantage of infrastructure investment in the Kibby Mountain wind project. So, in a sense, the Kibby Expansion application is a form of a leapfrog into Chain of Ponds and the proposed expansion of the Expedited Permitting Area further into Chain of Ponds represents a second leap of the frog. While it is true that the Guidance Document speaks to leapfrogging from one unexpedited area to another, still *the principle* in the Guidance Document against incremental encroachments on areas of limited and valuable natural resources is being violated in this case.

In addition, Criterion 1, according to the Guidance Document, is intended for cases where the Expedited Permitting Area map arbitrarily follows "township or other political boundaries,

which may cut across ridgelines or other naturally occurring geographic features relevant in the siting of wind power." In this case, the Western boundary of the Expedited Permitting Area does cut across Sisk Mountain, but not according to township or other political boundaries. This suggests that there may have been a deliberate reason why the Legislature did not include the southern summit of Sisk Mountain in the Expedited Permitting Area. That reason is revealed by TransCanada in its Revised Petition. The Revised Petition comments at 2 that "the southernmost peak of Sisk Mountain … is an important visual focal point in the surrounding landscape" and is not as suitable for wind as the northern ridges. Given this assessment by the petitioner, it is logical to assume that the Legislature drew the line to protect southern ridges of Sisk for the same reasons. Based on that assumption, it is imprudent and inappropriate for LURC to second guess the Legislature on invitation from TransCanada, especially where there is not even a proposed project to evaluate.

IV. OBJECTIONS BASED ON CRITERION 2: Meets state goals. Is important to meeting the state goals for wind energy development established in Section 3404.

The Guidance Document states that "projects that have a limited potential for energy generation and disproportionate impacts on public resources in the state are not important to meeting the state goals for wind energy development" within the meaning of Criterion 2. There are several reasons why the Revised Petition fails to meet this criterion.

First, as reduced, the 156 acre Revised Petition Area, described by the Petitioner as accommodating only a "modest future expansion project beyond the fifteen turbines proposed as part of the Kibby Expansion project," by definition can contribute very little to the reaching of the State goals for wind energy. There are absolutely no power output estimates for any proposed expansion project and therefore no ability to assess how any expansion will contribute to state goals, but from what has been described, the "modest expansion" would produce little additional

energy. And, according to the Revised Petition, this modest expansion will come at the cost of an important visual focal point in the area represented by the portions of the southern ridge of Sisk below the Expedited Permitting Area, a subject of further comment below.

Second, there is a serious question of the viability of any proposed project in the proposed expansion area. Last winter the met tower in the area in which expansion is now sought was destroyed by weather. Presumably, this limited TransCanada's ability to properly assess the wind potential for the proposed expanded area. If not, then one questions the rationales given by TransCanada for the damage and degradation to the ridge of Sisk as a result of the met tower installation. In addition, the severe weather on top of Kibby Mountain caused some of the turbines to cease operating, requiring substantial and costly efforts to restart them. This should not have come as a surprise to TransCanada. According to the expert testimony of Thomas Hewson, submitted on behalf of the Friends of the Western Mountains in the Redington Zoning Application (ZP 702), attached hereto as *Exhibit D*, in high elevations like Kibby and Sisk, "the turbines can be highly susceptible to prolonged low temperatures and freezing/icing events that can pose safety problems and as well as reduce project performance." Hewson Testimony at 6.

Third, according to the Hewson testimony, "there is a maximum of the amount of wind capacity that can be added to the electric grid without causing significant problems." Hewson Testimony at 3. Until TransCanada can quantify potential local transmission congestion problems, that is, "the availability of transmission lines to transfer generated electricity" in the words of the Guidance Document, the potential for any identified future project on the expanded zone is impossible to evaluate.

Fourth, a related point is whether any additional power produced from the as yet identified potential project would add to the energy goals of the State or simply displace existing

renewal energy sources. It is well known that windpower is neither reliable nor dispatchable at the control of grid managers. G. Schleede, "The True Cost of Electricity from Wind is Always Underestimated and its Value is Always Overestimated" attached hereto as *Exhibit E* at 4. Wind turbine projects can produce wind only when the wind is blowing within the right speed range, their output is intermittent, volatile, largely unpredictable and unreliable. Id. at 5. In practical terms, this means within any segment of the power grid, depending on location and mix, the use of wind power may have the regrettable consequence of displacing other forms of renewal energy sources. In the Western Maine transmission subarea, there is a high hydro and biomass capacity mix, making it likely that any power generated from the expanded area would displace renewable energy sources. Again, without more input from TransCanada about the power grid to be served by Kibby, Kibby Expansion and any future expansion into Chain of Ponds, it is impossible to evaluate whether the proposed expanded area has the potential to make any significant contribution to the State's energy goals.

Fifth, the Petition fails to identify the impact of a potential project on the "important natural, recreational, scenic, archaeological and historic resources in the area" as required by Criterion 2. Hikers, snowmobilers, ATV riders, hunters, skiers, camp owners and others are drawn to the Chain of Pond area for its outdoor opportunities and its wild beauty. If the Expedited Permitting Area is expanded further into Chain of Ponds, signaling encouragement and facilitating additional industrial development of Sisk Mountain, these resources will be compromised in ways not recognized in the Petition.

IV. OBJECTIONS BASED ON CRITERION 3: Principal values and goals. Would not compromise the principal values and goals identified in CLUP.

The Guidance Document does not provide any substantive guidance to Criterion 3. Accordingly, FMM will address the principal values and goals of CLUP relevant to the Petition.

A. The Broad Goals of CLUP.

The Broad Goals and Policies of CLUP are stated to be threefold: (1) to "support and promote the management of all resources, based on principles of **sound planning** and multiple uses," the "*separation of incompatible uses*" and the *preservation of "outstanding ... natural resource values* of the jurisdiction" (2) to "*conserve, protect and enhance the natural resources* of the jurisdiction" and (3) to *"[m]aintain the natural character" of areas* "having significant natural values and primitive recreational opportunities." CLUP at 134. [Emphasis added.]The emphasis here is to conserve and protect and develop in a compatible way. The proposed expansion of the Expedited Permitting Area is incompatible with all three of these goals.

B. The Specific Goals of the Commission.

The themes of conservation, protection and compatible uses are carried over to the Specific Goals and Policies of the Commission in Chapter 5 of CLUP. Under Natural Resources (Section I), the goals for Mountain Resources are to *"[c]onserve and protect the values of high mountain areas* from undue adverse impacts." CLUP at 137. [Emphasis added] The policies are to *"[i]dentify and protect high mountain resources* with particularly high natural resource values or sensitivity which are not appropriate for development." CLUP at 138. [Emphasis added.] Similar conservation and protection goals and policies are set for related recreational resources, CLUP at 138, wildlife and fisheries, CLUP at 139, and scenic resources, CLUP at 139. Under energy resources, the policies are stated to be to "*prohibit energy developments and related land uses in areas identified as environmentally sensitive* where there are overriding, conflicting environmental and other public values requiring protection," and to "[a]llow new or emerging technologies which do not have an undue adverse impact on existing uses and natural resources." CLUP at 136. [Emphasis added.] Similarly under Development (Section II), CLUP states that the

goal is to "[g]uide the location of new development in order to protect and conserve … natural resources, to ensure compatibility of land uses …." CLUP at 140.

C. Issue Discussions of Mountain Resources and Windpower.

Each of the Specific Goals and Discussions in CLUP cross references Issue Discussions in CLUP. The Issue Discussions for Mountain Resource Issues (CLUP at 56-60) and Energy Resource Issues (CLUP at 40-41) are particularly instructive to the task presently before LURC. CLUP recognizes that '[w]indpower is the subject of considerable interest in Maine." CLUP at 40. However, CLUP also recognized that '[l]arge windpower installations … have the potential to conflict with other values of [LURC's] jurisdiction, *particularly those associated with mountain areas*." CLUP at 40. More specifically, CLUP explains that LURC created the Mountain Area Protection (P-MA) zone for lands at elevations above 2700 feet to "protect the fragile environment and values associated with mountain areas". CLUP at 56. The P-MA zone "preserves mountain areas for their scenic and remote values, wildlife habitat, recreational opportunities and other uses." Id. What is repeatedly stated and emphasized in CLUP is that "[m]ountains and the scenic, natural, recreational, economic and other values they possess are limited resources in Maine." CLUP at 58. To state the obvious, CLUP continues by recognizing the threats to the value of mountain resources by development: "Mountain development carries a significant risk of erosion due to steep slopes and high erosion potential of many mountain soils. It also threatens to diminish many of the values associated with mountain areas, including scenic qualities…." The inevitable consequence of these values, according to CLUP, is that "proposed uses of mountain areas must be carefully evaluated to ensure that important values associated with these areas will be preserved for this and future generations." CLUP at 58.

Clearly, the Petition to expand the Expedited Permitting Area would seriously

compromise the principal values and goals of CLUP as illuminated by the Specific Goals and Issue Discussions in CLUP.

D. The Expansion of the Expedited Permitting Area into Chain of Ponds Would Compromise the Principal Values and Goals Identified in the CLUP.

The Petition addresses Criterion 3 in only the most general and conclusory terms, relying principally on prior submissions for rezoning for the Kibby Project. Reliance upon such submissions is particularly ironic because the Report of the Governor's Task Force on Wind Power Development (February 2008) stated that a "requirement that an applicant seeking rezoning for a planned development subdistrict demonstrate that a string of turbines, roads and transmission lines provides a substantially equivalent level of environmental protection to that provided under a P-MA zone is, in the judgment of the Task Force, inappropriate." Report at 16. Alec Giffin made the same comment during the Panel Discussion on the Draft Guidance Document.

Several factors that need to be considered in connection with the expansion of Expedited Permitting Area in terms of the principal values and goals of CLUP were identified in the comments of Alan Stearns, Deputy Director of the Maine Bureau of Public Lands in his comments dated February 26, 2010 to LURC on the proposed Kibby Expansion project, attached hereto as *Exhibit F.* Alan Stearns comments that:

i. TransCanada's analysis in the Kibby Expansion Project of natural resources is vague, conclusory and subjective;

ii. TransCanada does not take into account cumulative impacts of industrial development of mountain ridges;

iii. TransCanada promotes the "deeply troubl[ling]"arguments that once a scenic resource is compromised at all, further compromise is not adverse;

iv. The scenic byway and the Arnold Tail are so intertwined that that they should be

considered of equal significance;

v. TransCanada inappropriately dismisses scenic turnouts and minimizes the international military, literary and historic significance of the Arnold Trail;

vi. TransCanada gives inadequate attention to the impact on Arnold Pond (("Even modest impacts on this pond deserve rigorous analysis and exploration of mitigation. If the entirety of the wilderness scenic experience on this wilderness military trail is thrown under the bus for modern industrial development, we will have a lost a piece of history forever");

vii. TransCanada addresses the visual impact on Chain of Ponds in a mere sentence;

viii. There is no narrative specificity or objectivity in TransCanada's treatment of scenic impact, and TransCanada inappropriately suggests that mobile seasonal campers compromise views;

ix. "[I]f developed with wind turbines, land in the region will 'score' less well for any future momentum towards acquisition of conservation lands, and may be less likely to generate popular or institutional momentum for conservation"; and

x. TransCanada offers no tangible benefits that relate to recreation or land conservation.

FMM also incorporates herein by reference its objections to the Met Tower Application dated July 13, 2009 relating to the construction of a met tower in the area TransCanada now seeks to make part of the Expedited Permitting Area. See *Exhibit G*. These objection are to the further construction of roads and clearing above 2700 feet, the use of heavy equipment, objections based on soil suitability, possible blasting, adverse effects on wildlife resources, including the Golden Eagle and the Canada Lynx, objections based on vegetation and natural communities and objections based on the proximity of historic sites.

TransCanada suggests in its Petition that these kinds of considerations should await a development application once the Expedited Permitting Area is expanded. This is a strategy designed to avoid full consideration of the goals and principals of CLUP. TransCanada knows full well that once an area is designated as an Expedited Permitting Area, the "regulatory process

for determining environmental acceptability of wind energy developments [are] modified [that is, significantly relaxed as in Section 35-A M.R.S.A. §3452] *to encourage the siting of wind energy developments in these areas*." Chapter 661, An Act to Implement the Recommendations of the Governor's Task Force on Wind Power Development, Sec. A-5. enacting 35-A M.R.S.A. §3402.2. [Emphasis added.] In other words, TransCanada would like to avoid the details about the adverse effects on the natural resources until these details can be given diluted weight. The Chain of Ponds area is simply too remarkable, too beautiful, and too environmentally valuable a region to be designated as a target for encouragement of further industrial wind power development. LURC needs to give the opposite message through its denial of the Petition.

CONCLUSION

For all of the foregoing reasons, FMM urges LURC to deny TransCanada's Petition.

Dated: March 17, 2010

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EXHIBIT
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November 9, 2009

By Electronic and U.S. Mail

Catherine Carroll
Maine Land Use Regulation Commission
22 State House Station
Augusta, ME 04333

Re: Notification of TransCanada's Decision to File Grid-Scale Development Application in the Expedited Permitting Area

Dear Catherine:

On behalf of TransCanada Maine Wind Development, Inc. ("TransCanada"), I am writing to update you and the Commission on TransCanada's plans for the Kibby Expansion proposed for Sisk Mountain (the "Expansion Project"). Due to (i) timing and related business considerations, and (ii) the preference for locating wind power development in the expedited permitting area, TransCanada intends to file the Expansion Project as an application for a grid scale development located entirely within the existing expedited permitting area. The reasons for and implications of this decision are discussed in greater detail below.

Timing Considerations

As discussed in my letter of September 21, 2009, to the Commission, there are critical business considerations that affect the Expansion Project and, in particular, the timing for submitting and obtaining a decision on that project.[1] For example, the construction and in-service deadlines established pursuant to the American Recovery and Reinvestment Act of 2009, require that a qualifying project be under construction in 2010 and in-service by 2012. To qualify for that investment, TransCanada must commence construction in the third quarter of 2010. That schedule would also facilitate the efficient transition of construction activities from the Kibby Project to the Expansion Project and would allow the significant economic benefits that have occurred as part of the Kibby Project to continue for an additional year or more.

[1] I do not know whether the Commission was ever provided with a copy of my September 21, 2009 letter.

In recognition of the need to commence construction in the third quarter of 2010, TransCanada began consultation on the Expansion Project with Commission staff prior to March, 2009, and filed a petition to initiate a rulemaking that would expand the expedited permitting area (the "Petition") in June, 2009. The Commission initiated the rulemaking process in August and determined at that time to hold a public hearing on the proposed rule. It was not until the November 4, 2009 Commission meeting, however, that the Commission adopted a process and schedule for the rulemaking. Moreover, that schedule would not result in a decision on the Petition until June, 2010, at the earliest – one year after TransCanada formally initiated the process and more than one year after TransCanada began consultation on the Expansion Project and associated permitting process.

TransCanada would not be able to file its subsequent development application until sometime later in 2010, and thus the schedule and process outlined on November 4, 2009, would not accommodate a 2010 construction start date. As a result, TransCanada has modified its original proposal and will locate the turbines entirely within the existing expedited permitting area. We expect to file an application for the Expansion Project later this year. The statutory periods governing consideration of such an application ensure that a decision would be made no later than the third quarter of 2010.

Preference for Locating Wind Power in the Expedited Permitting Area

In addition to the timing considerations outlined above, it is clear that there is a preference for locating wind power within the expedited permitting area and, as revealed in the many Commission discussions on this topic, a discomfort with the statutory process for adding new areas to the expedited permitting area. We are sensitive to those considerations and understand the challenges the Commission faces in applying the statutory standards for the first time. Additionally, because the Commission is applying these standards for the first time, it has articulated a process that will include consideration of the standards generally and then staff development and Commission adoption of a guidance document on how the statutory criteria are to be applied, before it considers the merits of TransCanada's proposal. While we appreciate the desire for such an approach, in addition to extending the public hearing process over a period of more than four months, it creates significant regulatory uncertainty. For example, it is not clear what additional review criteria the Commission will develop and apply to TransCanada's request to expand the expedited permitting area. The uncertainty regarding the standards to be applied in adding land to the expedited permitting area coupled with the preference for locating wind power within the currently expedited permitting area have convinced TransCanada of the merits of modifying its original proposal.

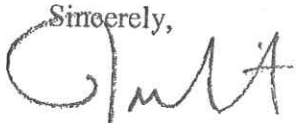
Status of Rulemaking on TransCanada's Petition to Add to the Expedited Permitting Area

TransCanada believes that the Petition process should continue as proposed, but will formally amend the information previously submitted in support of its Petition. Specifically, although the Petition was initiated to accommodate TransCanada's proposed Expansion Project, in response to the preference for locating development within the expedited permitting area and the schedule and process set forth for reaching a decision on the Petition, the Expansion Project

turbines will be located entirely within the expedited permitting area. As such, the Petition to expand the expedited area is no longer being proposed to accommodate the Expansion Project. If granted, however, it would provide an important future expansion opportunity. We do not believe that the criteria set forth in 35-A M.R.S.A. §3453 require that there be a specific project proposed for the area. Indeed, in light of the challenges associated with and timing required to add land to the expedited permitting area, we think it would be premature to propose a specific project until such time as the Commission makes a determination on the merits of the Petition.

We appreciate the time and consideration the Commission has devoted to TransCanada's rulemaking request to date and look forward to working with the Commission and staff on the Petition and the Expansion Project. As always, if you have any questions or concerns or would like any additional information, please do not hesitate to contact me or Nick or Christine from TransCanada.

Sincerely,



Juliet T. Browne

JTB/prf

cc: Samantha Horn-Olson (LURC)
Marcia Spencer Famous (LURC)
Nick Di domenico (TransCanada)
Christine Cinnamon (TransCanada)
Dana Valleau (TRC)
Amy Mills (AAG)

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EXHIBIT B

Rufus Brown

From: Browne, Juliet [jbrowne@verrilldana.com]
Sent: Tuesday, March 09, 2010 5:30 PM
To: Rufus Brown
Cc: Dain Trafton
Subject: RE: Expedited Permittinbg Area Rulemaking

Rufus,

You are correct. The project described in the original petition included up to 15 turbines, which have now been located entirely in the existing expedited permitting area and are the subject of the pending development application. If approved, the petition would accommodate a potential future expansion, but there is not a specific project or turbine layout yet proposed for that area.

Let me know if you have any further questions.

Juliet

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From: Rufus Brown [mailto:rbrown@brownburkelaw.com]
Sent: Monday, March 08, 2010 11:07 AM
To: Browne, Juliet
Cc: 'Dain Trafton'
Subject: Expedited Permittinbg Area Rulemaking

Juliet:

Can you confirm that, as represented in your letter to LURC dated November 9, 2009, the proposed project described in the Petition filed last Summer is no longer proposed (but rather is the subject of the pending Kibby Expansion application) and that there is no project proposed for the expansion area?

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EXHIBIT

C

NOTICE OF AGENCY RULE-MAKING

AGENCY: **04-061 - Maine Land Use Regulation Commission**

PROPOSED RULE NUMBERS: **2009-P328** and **P329**

CHAPTER NUMBER AND TITLE: **Ch. 10, Land Use Districts and Standards: Amendments to Appendix F, Expedited Wind Energy Development Area Designation**

CONTACT PERSON FOR THESE FILINGS: Marcia Spencer Famous, Land Use Regulation Commission, Department of Conservation, 22 State House Station, Augusta, Maine 04333-0022. Telephone: (207) 287-2631. E-mail: Marcia.Spencer-Famous@Maine.gov .

STATUTORY AUTHORITY FOR THIS RULE: 12 MRSA §§ 684; 685-A(7-A), (13); 685-C(5)

SUBSTANTIVE STATE OR FEDERAL LAW BEING IMPLEMENTED: None

CONTACT PERSON FOR SMALL BUSINESS INFORMATION: Same

URL: http://www.maine.gov/doc/lurc/index.shtml

OVERALL DEPARTMENT OF CONSERVATION RULE-MAKING LIAISON: Eliza.Townsend@Maine.gov

2009-P328: TRANSCANADA PETITION

PUBLIC HEARING:

Part I - December 16, 2009, at the Senator Inn, 284 Western Ave., Augusta, ME, starting at 9:00 a.m.
Part II - March 17, 2010, at Sugarloaf Inn, 5092 Sugarloaf Access Rd., Carrabassett Valley, starting at 10:00 am.

COMMENT DEADLINE: Following the close of Part II of the hearing, there will be an additional 10 day period for written comments to be submitted ending on March 29, 2010, followed by a 7 day rebuttal period ending on April 5, 2010, at which time the record for the rulemaking will close.

BRIEF SUMMARY: TransCanada Maine Wind Development, Inc. ("TransCanada") has petitioned the Land Use Regulation Commission (Commission) to expand the expedited wind energy permitting area by adding an approximately 631-acre parcel located in Chain of Ponds Township, Franklin County. In the expedited wind energy permitting area, wind energy development is an allowed use with a permit, and no subdistrict rezoning is required.

A two-part public hearing will be held, and the public is invited to testify at either or both parts of the hearing. The Commission requests, if possible, that those testifying at the hearing bring a written copy of their testimony for filing in the record.

Part I of the public hearing will include a panel discussion, addressing 35-A MRSA §3453, the statutory criteria for expanding the expedited wind energy development area. The panel will begin at 9:30 a.m., and the Commission will hear general public comment on the statutory criteria starting at 11:30 a.m.

Following the close of Part One of the hearing, the Commission will develop a draft Guidance Document to clarify the meaning of the criteria set forth in 35-A MRSA §3453. There will be a written public comment period on the draft Guidance Document from January 25, 2010 to February 10, 2010.

Part II of the public hearing will address the petition filed by TransCanada.

Written comments addressing the statutory criteria, the draft Guidance Document, and the petition, including data, views or arguments, may be submitted by US Postal Service Mail to "LURC, 22 State House Station, Augusta, ME 04333" or by e-mail to lurc@maine.gov (include in subject line "TransCanada") for consideration by the Commission.

Additional information, including a longer, more detailed notice of the rulemaking and the text of the proposed rule, may be obtained by contacting Marcia Spencer-Famous or by visiting the Commission's web site at: http://www.maine.gov/doc/lurc/projects/Transcanada/Transcanada.shtml .

DETAILED SUMMARY FOR TRANSCANADA PETITION RULE

The 123rd legislature enacted, "An Act to Implement Recommendations of the Governor's Task Force on Wind Power Development", Public Law 2007, Ch. 661 as emergency legislation that became effective April 18, 2008. The Act established the expedited permitting area for wind energy development in the jurisdiction of the Land Use Regulation Commission, and subsequently the Commission adopted through rule-making the description and map of the expedited permitting area. The description and map of the expedited permitting area were placed into the Commission's rules as Appendix F to Ch. 10, *Land Use Districts and Standards*. 12 MRSA §685-A(13) provides for expansion of the expedited permitting area by the Commission in accordance with 35-A MRSA §3453, which states:

> "The Maine Land Use Regulation Commission may, by rule adopted in accordance with Title 5 Ch. 375, add a specified place in the State's unorganized or de-organized areas to the expedited permitting area. In order to add a specified place to the expedited permitting area, the Maine Land Use Regulation Commission must determine that the proposed addition to the expedited permitting area:
>
> 1. **Geographic extension.** Involves a logical geographic extension of the currently designated expedited permitting area;
> 2. **Meets state goals.** Is important to meeting the state goals for wind energy development established in §3404; and
> 3. **Principal values and goals.** Would not compromise the principal values and the goals identified in the comprehensive land use plan adopted by the Maine Land Use Regulation Commission pursuant to Title 12, §685-C.
>
> Rules adopted by the Maine Land Use Regulation Commission pursuant to this section are routine technical rules as defined in Title 5, Ch. 375, subchapter 2-A."

Analysis and Expected Operation of the Rule

TransCanada's proposed rule change would add a 631-acre parcel to the expedited permitting area for wind energy development in Chain of Ponds Township, Franklin County. The purpose of the proposed addition is to provide a future expansion opportunity for the existing Kibby Wind Project, which is currently wholly located within the expedited permitting area in Kibby and Skinner Twps. By adding the parcel to the expedited permitting area, any future wind energy development located within that parcel would be subject to the provisions of PL 2007, Ch. 661. In the expedited permitting area, wind energy development is an allowed use with a permit, and no subdistrict rezoning is required.

Public Hearing

A two-part public hearing will be held, and the public is invited to testify at either or both parts of the hearing. The Commission requests, if possible, that those testifying at the hearing bring a written copy of their testimony for filing in the record.

1. **Part One.** Part One of the hearing will be held on December 16, 2009, at the Senator Inn, 284 Western Ave., Augusta, ME.

   Part One of the hearing will be conducted as follows:

   * 9:00 am - Opening Statement by the Commission Chair
   * 9:30 to 11:30 - The Invited Panel will present testimony addressing the meaning of 35-A MRSA §3453, the statutory criteria enacted by P.L. 2007 c. 661 ("the Wind Energy Act") for expanding the expedited wind energy development area. The panel will be asked to address the following questions:
     - What did the Wind Energy Act, which enacted recommendations of the Governor's Task Force on Wind Power Development ('the Task Force"), do, and what did it not do?
     - What do the § 3453 criteria, which the Commission must use when adding specific areas to the expedited permitting area, mean?
     - How was the area designated as the windpower expedited permitting area developed?
   * 11:30 to 12:30 – Public testimony regarding the same questions addressed by the panel.
   * 12:30 to 1:30 - Break for lunch
   * 1:30 - Resume public testimony regarding the same questions addressed by the panel.
   * Deliberation by the Commission
   * Closing Statement by Commission Chair

2. **Guidance Document.** Following the close of Part One of the hearing, the Commission will develop a Guidance Document to clarify the meaning of the criteria set forth in 35-A MRSA § 3453, according to the following schedule:

   * January 25, 2010: Draft Guidance Document available, by contacting Marcia Spencer-Famous or by visiting the Commission's website at: http://www.maine.gov/doc/lurc/projects/Transcanada/Transcanada.shtml, for written public comment.
   * February 3, 2010 Commission meeting: Discussion by Commission of draft Guidance Document
   * February 10, 2010: End of public written comment period on draft Guidance Document
   * March 3, 2010 Commission meeting: Consideration by Commission of Guidance Document

3. **Part Two.** Part Two of the hearing will be held on March 17, 2010 at Sugarloaf Inn, 5092 Sugarloaf Access Rd., Carrabassett Valley, starting at 10:00 am. The testimony accepted at Part Two of the hearing will focus on the petition by TransCanada to add a specified parcel in Chain of Ponds Twp., Franklin County, and the applicable statutory criteria set forth at 35-A MRSA § 3453. Additional information on TransCanada's proposal, including the petition submitted by TransCanada, may be found on the Commission's website at: http://www.maine.gov/doc/lurc/projects/Transcanada/Transcanada.shtml .

   Part Two of the hearing will be conducted as follows:

   * Opening Statement by Commission Chair
   * Summary of proposed expedited area expansion by TransCanada
   * Questions by the Commission
   * Public testimony
   * Rebuttal statements by TransCanada
   * Closing Statement by Commission Chair

EXHIBIT
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STATE OF MAINE
LAND USE REGULATION COMMISION

In the matter of
Rezoning Application ZP 702
Maine Mountain Power, LLC

PRE-FILED DIRECT TESTIMONY OF THOMAS A HEWSON JR ON BEHALF OF THE FRIENDS OF THE WESTERN MOUNTAINS

Q: PLEASE STATE YOUR NAME, OCCUPATION AND BUSINESS ADDRESS.

A: My name is Thomas A Hewson Jr. I have been an energy and environmental consultant for 30 years. Since 1981, I have been a Principal at Energy Ventures Analysis that is located at 1901 N. Moore St. Suite 1200, Arlington, Virginia, 22209-1706. My resume and relevant experience to the issues in this proceeding are provided in Exhibit TAH-1.

Q: ON WHOSE BEHALF ARE YOU SUBMITTING TESTIMONY?

A: I am submitting testimony on behalf of the Friends of the Western Mountains.

Q: PLEASE DESCRIBE THE ASSIGNMENT YOU WERE GIVEN FOR THIS PROCEEDING

A: I was asked to review the information Maine Mountain Power LLC has provided on the 90 MW Redington Mountain Wind project in its rezoning application to the Maine Land Use Regulation Commission and provide an independent opinion on its claims of power output, project need, local economic benefits and pollution prevention claims.

Q: COULD YOU SUMMARIZE YOUR FINDINGS?

A: My testimony covers four areas. My major findings discussed in my testimony are:

- Project output estimates unsupported and likely overstated
- No demonstrated need for the Redington Mountain Wind project
- Project's local economic impacts unstudied with no examination of offsetting economic costs
- Project will provide no incremental air pollution control benefits

Q: HAVE YOU REVIEWED MAINE MOUNTAIN POWER LLC'S REZONING APPLICATION?

A: Yes, I have reviewed their rezoning application.

Q: DOES THIS APPLICATION CONTAIN ANY ESTIMATE OF THE PROPOSED WIND POWER PROJECT'S OUTPUT? IF IT DOES, WHAT WAS THE ESTIMATE?

A: Yes, in section 1 page 1 of the application, Maine Mountain Power LLC estimated that the proposed 90 MW wind project would provide 265,000 MWh of power each year. At this output, the Redington Mountain Wind project would have a calculated 33.6% capacity factor[1].

[1] Calculation: 265,000 MWh/(90MW*8760 hr/yr)= 33.6% capacity factor

Q: WHY ARE THESE POWER OUTPUT ESTIMATES IMPORTANT TO THE COMMISSION?

A: The energy output estimates are used to calculate many of the project benefit claims such as the avoided pollution benefits and its power contribution to Maine electricity generation. If the energy output is overstated, then many calculated project benefits that the Commission considers in its application determination would likewise be overstated.

Second, there is a maximum limit to the amount of wind capacity that can be added to the electric grid without causing significant problems. According to the 2006 National Renewable Energy Laboratory paper entitled "*Grid Impacts of Wind Power Availability: Recent Assessments from a Variety of Utilities in the United States*"[2], this limitation is reached when wind capacity reaches between 10-20 percent of the peak demand based upon capacity. According to the ISO-New England *Regional System Plan 2005 Report* (October 2005), the estimated summer peak demand for the Western Maine/Central Maine sub region is 1,045 MW in 2005 and is projected to grow to 1,225-1,280 MW by 2014. Given these loads, the maximum allowable regional wind capacity limitation would currently be between 104-208 MW and would grow to just 122-256 MW by 2014. By building a 90 MW Redington Mountain Wind project, few remaining wind projects could be built within the region without causing significant transmission problems. I leave it up to the Commission to determine if precluding other future wind projects should be a consideration in their Redington Mountain Wind project rezoning decision.

[2] Paper was presented at the 2006 European Wind Energy Conference (EWEC) and can be found at: http://www.uwig.org/ewec06gridpaper.pdf

Q: DID THE APPICANT PROVIDE ANY DATA TO DOCUMENT THE POWER OUTPUT ESTIMATE OF 265,000 MWH?

A: No. Supporting documentation or reports that are often required by a lender were not provided in the Commission application. The application simply attributes their power estimate to Ron Nierenberg, Consulting Meteorologist from Camas, Washington. His estimate was based upon a review of wind meteorological data from the site[3]. The wind data and assumptions he used to develop this estimate were not provided or described anywhere in the application.

Asking the Commission to make a rezoning change without any wind resource data upon which to judge the site's usefulness for a wind project is shortsighted and does not allow the public to fully comment on whether a rezoning variance should be granted. The Applicant's response to the Black Nubble Mountain wind project only option indicates that there are significant differences in wind resources between the Redington and Black Nubble Mountain sites.

All electric generation options have their environmental impacts. Wind creates a land use challenge since it effects a large area but yields little electricity.

Q. DOES ANY PUBLICALY AVAILABLE INFORMATION SUPPORT THE 265,000 MWH ESTIMATE?

[3] Application Section 1 page 1 footnote 1

No. Public sources indicate that Maine Mountain Power LLC may have overstated the project's performance and thereby overstated its benefits and revenues.

The best public source on wind project performance is monthly power output data provided by operating wind projects to the US Department of Energy on the EIA-Form 906. These data allow a comparison of each project's annual and monthly capacity factors and differences between different areas. The copy of the 2005 wind project performance data is provided in Exhibit TAH-2.

As shown in the exhibit, the project's claimed performance (33.6% capacity factor) would exceed all existing wind projects in eastern US. If the 2005 US national average wind project performance (29.0%) was applied, the 90 MW Redington Mountain Wind project would produce 14 percent less power or only 229,000 MWh. If the average performance of other New England projects was used, the output would be 36 percent less or 170,000 MWh/year.

I am very concerned that I have seen no evidence provided by the applicant that would support their estimated performance that would make the Redington Mountain Wind project the highest performing wind project in the eastern US.

Q: DO YOU HAVE OTHER CONCERNS ABOUT THE SITE THAT WOULD ADVERSELY AFFECT THE REDINGTON MOUNTAIN WIND PROJECT'S PERFORMANCE?

A: Yes, I have two major performance concerns for this project—icing/cold temperature problems because of the site's high elevation and the high technology risk of

being the first US project to use the Vestas V90-3MW turbine design. Both issues were not discussed in the application and it is uncertain how they are incorporated into the project output estimate.

First, the proposed wind project site is located in very high elevations between 2,900-4,000 feet. At these higher site elevations, the turbines can be highly susceptible to prolonged low temperatures and freezing/icing events that can pose a safety problems and as well as reduce project performance. The Vermont Agency of Natural Resources Wind Power Working Group highlighted these concerns in their wind economic fact sheet[4]:

> *"The best resources for wind power development in Vermont are north-south running ridgelines that extend for one mile without extended or abrupt changes in grade, with elevations between 2500 and 3500 feet. Above 3500 feet, icing of blades is problematic; below 2500 feet, wind velocity and constancy drop off dramatically."*

This concern was also illustrated in the wind monitoring data for the East Haven Wind project in northeastern Vermont. The monitoring sensor at an elevation of 3,375 feet did not report wind data for 21 percent of the time (76.6 days equivalent). The developer's wind monitoring report attributed the problem primarily to icing.

[4] This fact sheet from the Vermont Agency of Natural Resources can be found at http://www.vermontwindpolicy.org/factsheets/Wind%20Economics1.pdf

Turbine icing impacts at high elevations have also been well documented in technical literature. In a June 2000 paper entitled, *Wind Energy: Cold Weather Issues* by Lacroix and Manwell of the University of Massachusetts[5] states:

> "*In the Northwestern US, the most suitable sites for wind turbines are frequently mountains or ridgetops. These also are areas where wind turbines are susceptible to rime ice due to the relative proximity of low-level clouds. Bailey (1990) suggests that during cold weather at altitude about 2300 feet, rime ice can be expected approximately 10% of the time. This figure jumps to 20% for altitude above 3000 feet.*"[6]

Icing can also potentially create some safety problems from ice throws if turbines are nearby to public areas. Morgan et al in their April 1998 Boreas IV paper entitled "*Assessment of Safety Risks Arising from Wind Turbine Icing*" Icing in Standards"[7] quantified the safety risks from ice throws for a 50 meter wind turbine rotor (Note: Redington Mountain Wind uses a larger 90 meter rotor that may throw ice farther) for three types of icing conditions (Note: Redington Mountain is considered to be a "heavy icing" area under the article's definitions). These risks are shown in figure 3 of this article that is provided below:

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[5] This paper is available at http://www.hydro.mb.ca/issues/transmission_projects/wuskwatim/exhibits_1031b.pdf

[6] This passage refers to a 1990 Windpower article by B. H. Bailey entitiled, "The Potential for Icing of Wind Turbines in the Northeastern US.

[7] http://virtual.vtt.fi/virtual/arcticwind/boreasiv/assessment_of_safety.pdf

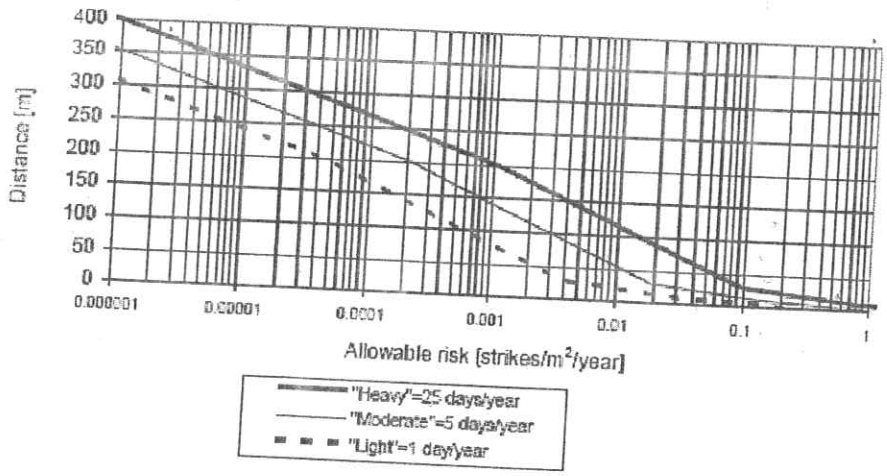

Figure 3 Safety distance for different icing levels (50m rotor)

All this evidence and literature indicate that icing problems can occur in higher elevations. As is shown in Exhibit TAH-3, **all 12 Redington Mountain sites and 75 percent (3 of 4 turbines) of the Upper Black Nubble sites have elevations in excess of 3,500 feet that Vermont considers as unsuitable for wind turbines because of prolonged icing problems**. Surprisingly, the application contains no discussion on either the site's cold temperatures or the estimated power losses and safety issues from icing conditions.

Secondly, Maine Mountain Power LLC plans to use the Vestas V90- 3 MW turbines. To my knowledge, these turbines have not yet been used in any existing wind projects in US. New turbine designs often have a much greater technology risk and may have a lower availability because of unforeseen problems than the more conventional turbine models in widespread use. Lower availabilities would also translate into lower project

performance and lower output. Again without any documentation provided on their power output estimate, it is impossible to determine how this issue was handled, if at all.

In summary, having a site with very high elevations that are prone to icing and much lower air temperatures and the use of a new turbine design should contribute to lower turbine availability and higher project power losses. Half of the Redington Mountain Wind project's turbines are at elevations would be considered as unsuitable for wind projects in Vermont.

Q: FROM YOUR REVIEW OF THE APPLICATION, DID YOU FIND THAT THEY DEMONSTRATED THE NEED FOR THE PROJECT?

A: No they did not. The applicant states that "the Redington Wind Farm will help Maine's economy become more economically and environmentally sustainable" by generating renewable energy, promoting economic development, reducing pollution and reducing dependence upon imported fossil fuels[8].

First, Maine does not need the Redington Mountain Wind project to meet its in-state power needs. The state is already a net power exporter since its in-state power generation (18,550,000 MWh) significantly exceeds Maine's retail sales (12,321,000 MWh) by more than 50 percent (Exhibit TAH-4).

Second, while this project will generate renewable energy, it is not needed to meet Maine's 30 percent renewable portfolio standard that have already been exceeded. As is shown in Exhibit TAH-4, Maine already has the highest percentage of energy produced

[8] Application Section 1 page 15

from non-hydro renewables in the nation—21.8 percent. In combination with its 19.2 percent generation from hydroelectric facilities, 41 percent of the in-state generation already qualifies towards and exceeds Maine's Renewable Portfolio Standard. In fact, according to the January 2006 *System Impact Study Redington Mountain Wind Farm* (Central Maine Power), the proposed wind project will likely displace some local hydro (Wyman and Harris hydro projects) and biomass (Stratton Energy) project output[9].

Finally and more importantly, Redington Mountain Wind may receive only a minimal generation capacity credit[10] towards the New England power pool reserve margin requirements that trigger new powerplant construction. With a summer capacity credit of about 9 MW, the Redington Mountain Wind project will likely not displace any new conventional powerplant construction (nuclear, fossil fuel, biomass, etc.) in either Maine or the New England power pool.

Q: DID YOU EXAMINE THE APPLICATION'S LOCAL ECONOMIC BENEFIT CLAIMS?

A: Yes I did. The application states that the $130 million project expects to pay more than $500,000 a year in property taxes as well as provide 100 construction jobs and 5-10 full time jobs[11]. The application simply provided a copy of a 2004 Oregon report entitled, *Windfall from the Wind Farm Sherman County, Oregon* to illustrate the benefits of a local wind project. However, no report was provided that discusses the Redington

[9] System Impact Study: Redington Mountain Wind Farm May 2006, Table 5-3, Table 5-4,and Table 5-7. This report was included in the application in Section 1 Part 5.4

[10] ISO-NE Manual 20 (Installed Capacity Manual- Rev 12 effective date 1/1/06) contains the methodology for assigning capacity credits for wind projects in Supplement D. Currently the 3 New England wind projects have credited capacity of only 10% of nameplate capacity. This translates to 9 MW for the proposed Redington Mountain Wind project.

[11] Application Section 1 page 23

Mountain Wind project's impact on Franklin County or that provides project cash flow analyses to quantify the impact.

Unfortunately, the application provides only a partial picture and does not describe the project's full economic project impact.

First, much of the capital investment will not be spent inside Maine to directly benefit Maine businesses. Two-thirds ($86.6 million) of the project capital investment[12] will be for the wind turbine purchases alone. These purchases would provide no direct benefit to the state economic activity since they are from outside the state (Vesta is a Danish wind turbine manufacturer). In addition, not all the remaining work may be spent on local contractors. The turbine installation may require specialized equipment and qualified contractors from outside the area. Other equipment (e.g. transformers, transmission towers, transmission lines, etc.) may be purchased from outside the state. Therefore, only a modest portion of the investment may be spent inside Maine and directly benefit Maine businesses.

Second, the project may not pay its full share of local property taxes. The application's $500,000 per year of local property tax estimate represents only 0.38 percent of the $130 million project costs. While not all the capital investment will be subject to local property taxes, the applicant must be assuming some property tax abatement to the 1.024 percent Franklin County property tax rate for 2005 that is neither identified nor discussed. The developers for the Mars Hill wind project apparently considered local property tax abatement as an essential element to proceed with construction.

[12] Application Section 3 page 1 Table

This tax abatement estimated to be roughly $4.3 million maybe only a small part of the $239 million in governmental subsidies the Redington Mountain Wind project may receive over 20 years from both the US Taxpayer and the New England ratepayer[13]. If the project is built, these governmental subsidies may exceed its estimated capital investment cost and could reach the equivalent of 57 percent of the power sales revenues.

While the Redington Mountain Wind project will create an estimated 100 temporary construction jobs and only 5-10 full-time jobs, how many of these jobs will be filled by local residents is not discussed nor are their effects on the local economy quantified. These data may be important for the Commission to weigh any local employment impacts against the project's negative costs to the local area and the state. These potential negative costs include ratepayer/taxpayer subsidies, higher electricity rates, potential loss of wind development opportunities in other parts of the state[14] and adverse environmental impacts (e.g. wildlife as addressed in other intervener testimony and noise).

Q: THE APPLICATION STATES THAT THE REDINGTON MOUNTAIN WIND PROJECT WILL PREVENT 157,156 TONS PER YEAR OF POLLUTION. DO YOU AGREE WITH THEIR ESTIMATE?

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[13] The project may qualify for both the Federal Production tax credit (may reach $55 million at applicant's estimated output) if project placed online prior to 12/31/2007 and Renewable Energy Credit Sales (estimated to reach $180 million over 20 years at applicant's estimated output).

[14] A recent 2006 NREL paper presented at the 2006 European Wind Energy Conference (EWEC) entitled "*Grid Impacts of Wind Power Availability: Recent Assessments from a Variety of Utilities in the United States*" found that current utility systems can handle wind penetrations up to up to 10-20 percent based upon capacity. For the Western Maine/Central Maine sub region, this translates to a maximum wind capacity of between 104-208 MW. By building a 90 MW Redington Mountain, little remaining wind projects could be built without causing significant transmission problems. Paper is available at: http://www.uwig.org/ewec06gridpaper.pdf

A: No, I do not. While the proposed project does not create any air emissions, it still will not prevent **any** incremental air pollution emissions.

First, the vast majority of this amount (99.8 percent or 156,795 TPY) is associated with carbon dioxide emissions[15] that neither EPA nor the state of Maine currently regulates as a pollutant.

Second, no additional carbon dioxide emissions will actually be prevented if Redington Mountain Wind project is built. These claimed CO2 reductions are part of the overall Greenhouse Gas Emission reductions that have been projected to occur due the implementation of the New England Renewable Portfolio Standards *and will occur independent on whether Redington Mountain Wind project is built.* Simply put, the Redington Mountain Wind project is competing to displace other qualifying renewable energy projects for this special protected set-aside renewable market demand that provides renewable developers additional revenues from the sale of renewable energy credits to cover their higher costs. Without the revenues from the sale of renewable energy credits, this project would likely not be built.

The correct "avoided" or prevented emissions calculation would be to compare air emissions versus other qualifying renewable energy projects that would be displaced or not built at all if Redington Mountain Wind project is built because of the limited size of the set-aside renewable power market. Since these competing qualifying renewable projects also are assumed to have no added carbon emissions, the **net displaced carbon**

[15] Application Section 1 Part 10.7 Pollution Prevention Spreadsheet

dioxide emissions from Redington Mountain Wind Project are zero tons not the 156,795 TPY claimed by Maine Mountain Power LLC in its application.

The remaining claimed avoided emissions of 263 tons of SO2 and 97 tons of NOx has similar problems in that it does not examine the true displaced generation by the project. In addition, since SO2 and NOx emissions are subject to a cap and trade program. If the project could have displaced any of these emissions, the generator could sell and/or transfer his unused emissions credits to another source. In summary SO2 and NOx emissions that are regulated under a cap and trade program may be displaced but never avoided.

Q: SOME CO2 EMISSION DISPLACEMENT DOES OCCUR DUE TO THE ADOPTION OF RENEWABLE PORTFOLIO STANDARDS. HOW EFFECTIVE IS THE REDINGTON MOUNTAIN WIND PROJECT LIKELY TO BE IN DISPLACING FOSSIL FUEL GENERATION VERSUS ANOTHER COMPETING RENEWABLE ENERGY PROJECT WITH THE SAME ELECTRICITY OUTPUT LOCATED ELSEWHERE IN NEW ENGLAND?

A: To answer this question correctly, one must do some complex grid system modeling that incorporates the hourly system loads, transmission grid constraints, unit economic dispatch[16] and hourly power outputs from the renewable project. The model's answer would be highly dependent upon the type and location of the competing renewable power project. Unfortunately, Maine Mountain Power LLC has elected not to conduct such modeling in developing its own pollution prevention calculations.

[16] Economic dispatch deals with the order that units are dispatched based upon their incremental generation costs. The grid operator dispatches the unit in order of increasing incremental costs.

However, given these reservations, I would consider it highly likely that a competing renewable energy project with the same electric output would displace more conventional fossil fuel generation than the Redington Mountain Wind project. My conclusion is based upon the location of the Redington Mountain Wind project within the New England power grid and the generation mix within the Central Maine Power's Western Transmission area. According to the January 2006 *System Impact Study Redington Mountain Wind Farm* (Central Maine Power), the Redington Mountain Wind project will likely displace some local hydro (Wyman and Harris hydro projects) in the Maine-New England Transmission Interface[17] when the wind project is in operation. Under light western Maine generation condition case, Stratton Energy's biomass output would also be reduced[18]. Therefore, in the ISO-New England local transmission modeling cases, Redington Mountain Wind project will displace renewable energy sources.

In addition, given Central/Western Maine's already high hydro and biomass capacity mix being the highest of any subarea within the ISO-New England power pool[19], a renewable project in any other New England subarea would likely displace more conventional fossil fuel generation.

Q: DOES THAT CONCLUDE YOUR TESTIMONY?

A: Yes it does.

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[17] System Impact Study: Redington Mountain Wind Farm May 2006, Table 5-3 and Table 5-4 on page 18, Table 5-7. This report was included in the application in Section 1 Part 5.4

[18] Ibid, Table 5-7 pg 20

[19] Source: *Regional System Plan 2005 Report* (ISO-New England, October 2005) Table 5.2 page 67

Exhibit TAH-1

RESUME OF
THOMAS A. HEWSON JR.

PROFESSIONAL EXPERIENCE

1981-Present Energy Ventures Analysis, Inc.
Principal

Responsible for power industry market studies. Provides regular power industry forecasts of future electricity demand growth, generation mix, environmental compliance and production cost changes for Fuelcast subscribers and individual client studies. Completed numerous studies examining the effect of future environmental regulation and utility deregulation on fuel prices, supplier capacity decisions (new, repower, retire), generation/environmental technology choice, wholesale electric prices and emission allowance values. Provided market assessments for new fuel, generation and pollution control technologies. Directed industrial utility group examining repowering technology options, costs and risks. Completes studies on renewable power options, costs, incentives and price impacts. Performs assessments of electricity demand, energy conservation potential and alternative energy charge frameworks for power consumers.

Responsible for corporate emission allowance forecasts and assessments. Provides ongoing forecasts of emission trading market prices and fundamentals of existing Acid Rain SO2 market, seasonal NOx market, CAIR, RGGI and individual state new source offset markets. Assesses future market trading values for mercury and carbon dioxide. Evaluates wide range of state legislative multi-pollutant proposals and their effect on regional production costs, state GDP, and environmental benefits. Engaged in developing new rules and regulations to expand existing emission allowance trading markets to include non-traditional sources (e.g. mobile sources).

Directs technical feasibility and environmental permitting studies. Expert in electric utility repowering technologies, fuel upgrading and environmental control technologies. Work includes several plant specific analyses on the costs of reducing SO2 emissions through allowance purchases, switching to lower sulfur fuels, least emission dispatching, plant retirements, repowering and FGD scrubber retrofits for all major coal and oil fired utility stations. Examined feasibility/costs of hazardous waste treatment/disposal for all major industrial waste streams in Louisiana.

1976- 1981 **Energy and Environmental Analysis, Inc.**
Project Manager

Responsible for environmental and regulatory analysis. Examined, for governmental and industrial clients, the requirements and associated impacts on current industrial practices of the Clean Water Act, Clean Air Act, Resource Conservation and Recovery Act, Toxic Substances Control Act, Safe Drinking Water Act, Fuel Use Act, Natural Gas Act, Natural Gas Policy Act, Surface Mining and Reclamation Act and Occupational Safety and Health Act. Results of these policy, economic and technical analyses have been used

for Congressional hearings, EPA rulemaking, court testimony, industrial policies, administrative hearings and permit negotiations. Developed Federal and state regulatory compliance strategies for the Department of Energy and several industrial clients. On behalf of several clients, he has applied for construction, NPDES, air, solid waste, hazardous waste, water use and land use permits.

Responsible for solid waste/hazardous waste management analyses. Evaluations have included analyses of solid waste and hazardous waste treatment/disposal options for the fertilizer, fermentation ethanol, petrochemical, inorganic chemical, electric utility, synthetic fuel, pulp and paper and mineral processing industries.

Publications

Mr. Hewson has presented and published several papers on the electric utility industry and emission allowance markets. Also co-author on two papers on innovative wastewater treatment technologies.

Educational Background

1976 B.S.E. (Civil Engineering), Princeton University.

Mr. Hewson was appointed for a 3-year term as a Member of the Alexandria Environmental Policy Commission in 2005.

Thomas Hewson Relevant Renewable Energy Experience

While renewable energy represents only a small share of current electric generation in the United States, it accounts for a growing share of my consulting work. My projects cover the full range of renewable power technology options—hydroelectric, biomass, geothermal, wind and solar. Some selected renewable projects on which I have worked include:

- Developed listings of existing and likely new wind projects for the Department of Energy's Energy Information Administration.
- Assessed economic and environmental issues of individual wind power projects proposed in the states of Illinois, Maine, Maryland, Massachusetts, Michigan, New York, Pennsylvania, Texas, Vermont, and Wisconsin for public interest groups. These evaluations looked into issues such as wind resource quality, power production costs, transmission, noise, aesthetics, and environmental impacts.
- Participated as a panelist for open public forums dealing with wind energy issues in Michigan, Vermont and Ontario.
- Provided input and peer review for Maine Public Utilities Commission Report on the *Viability of Wind Power Development in Maine* (January 2005)
- Provided comments on the estimated production and environmental issues of the proposed 468 MW Cape Wind Project
- Provided expert testimony on wind power potential and other project issues for hearings at the Vermont Public Service Board (Docket 6911), Maryland Public Service Commission (Case 9008) and California Public Utilities Commission (Docket U-338-E)
- Provided evaluations of proposed impacts of renewable energy portfolio standard legislation/regulation for several states including California, Colorado, Florida, Illinois, Maryland, Michigan, Minnesota, Montana, New York, Pennsylvania, Texas, and Washington.
- Evaluated costs and issues associated with several Congressional proposals to establish a National renewable portfolio standard for 2 major electric utilities.
- Examined the cost, performance, and permitting issues of renewable power options (including wind) for the National Rural Electric Cooperative Association.
- Projected future renewable energy capacity and energy generation as part of the semi-annual Fuelcast forecasts for subscribers that include major electric utilities, fuel suppliers, and fuel transporters.
- Provided periodic biomass price forecasts and analysis for the Vermont Department of Public Service and for utility studies.

EXHIBIT TAH-2
REPORTED WIND PROJECT PERFORMANCE FROM EIA FORM 906 DATA

Operator/Utility	Pltname	State	Capacity (MW) 2005	Gen (MWh) 2005	Adj missing data Capacity Factor 2005
Cabazon Wind Partners LLC	Cabazon Wind Partners	CA	41	114,364	31.9%
Cameron Ridge LLC	Cameron Ridge	CA	57	107,945	37.0%
Difwind Farms Ltd VI	Difwind Farms Limited VI	CA	27	47,685	20.1%
Enron	Green Power I	CA	17	26,279	18.2%
ESI Mojave LLC	Mojave 16	CA	30	44,792	17.0%
ESI Mojave LLC	Mojave 17	CA	25	40,612	18.5%
ESI Mojave LLC	Mojave 18	CA	30	64,481	24.5%
EUI Management PH Inc	EUIPH Wind Farm	CA	26	28,311	16.9%
FPL Energy	High Winds LLC	CA	146	379,904	35.7%
FPL Energy	South Dakota Wind Energy Center	CA	41	152,327	42.9%
Howden Wind Parks Inc	Howden Windpark I	CA	25	23,617	11.9%
Kenetech Windpower Inc	Altamont Pass Windplant	CA	313	536,253	21.4%
Oak Creek Energy System Inc II	Oak Creek Energy Systems Incorporated	CA	28	96,104	39.3%
PGE Energy	Mountain View	CA	44	129,043	36.1%
Ridgetop Energy LLC	Cannon Energy Corp	CA	60	62,748	11.9%
San Gorgonio Farms, Inc.	Karen Avenue Windfarm	CA	8	31,271	47.6%
San Gorgonio Wind Farms Inc	San Gorgonio Farms Wind Energy Power Plant	CA	34	70,882	24.0%
Seawest Windpower Inc	Altech III	CA	32	27,873	13.1%
Seawest Windpower Inc	San Gorgonio Westwinds II LLC	CA	43	78,611	27.6%
TPC 4 Inc	Mojave 4	CA	29	65,796	28.2%
TPC Windfarms LLC	TPC Windfarms LLC	CA	29	61,047	24.3%
VMSO IV Corp	Cabazon Wind Farm	CA	40	75,708	21.7%
Whitewater Hill Wind Parnters	Whitewater Hill Wind Partners	CA	62	191,861	35.6%
Windpower Partners 1993 LP	San Gorgonio Windplant WPP93	CA	35	75,994	25.1%
Zond Systems Inc	Sky River Partnership	CA	77	213,102	31.6%
P P M Energy Inc.	Colorado Green Holdings LLC	CO	162	633,389	44.6%
Public Service Co of Colo	Ponnequin	CO	30	40,939	15.6%
Ridgecrest Wind Partners, LLC	Peetz Table Wind Farm	CO	30	58,408	30.0%
Hawaii Electric Light Co	Lalamilo	HI	2	1,697	8.8%
Cedar Falls Utilities	IDWGP	IA	2	5,398	27.4%
FPL Energy Hancock County Wind	Hancock County	IA	98	154,829	26.9%
Hawkeye Power Partners LLC	Hawkeye Power Partners LLC	IA	42	32,099	26.1%
MidAmerican Energy Company	Century	IA	150	37,804	33.9%
MidAmerican Energy Company	Intrepid	IA	159	449,206	32.3%
Northern Iowa Windpower, LLC	Top of Iowa	IA	80	87,359	12.5%
PPM Energy Inc	Flying Cloud Power Partners LL	IA	44	150,523	39.1%
Navitas Energy	Mendota Hills	IL	50	80,565	18.4%
FPL Energy	Gray County Wind Energy	KS	112	332,412	37.0%
Westar Energy Inc.	Westar Wind	KS	2	778	7.4%

Bay Wind Power	Bay Windpower I	MI	1	1,846	26.3%
Chanarambie Power Partners LLC	Chanarambie Power Partners	MN	85	256,064	34.4%
Dairyland Power Cooperative	G McNeilus Wind	MN	32	95,059	33.9%
Enron Wind Dev Corp LB I	Lake Benton 1 Wind Power Facility	MN	107	254,923	27.1%
Enron Wind Dev Corp LB II	Lake Benton II Wind PO Facility	MN	104	278,642	30.7%
Enron Wind Dev Corp SL I	Storm Lake 1 Wind Power	MN	113	272,806	27.7%
Enron Wind Dev Crop SL II	Storm Lake II Wind PO Facility	MN	60	193,189	36.8%
Garwin McNeilus	Adams Wind Farm	MN	10	56,952	65.7%
P P M Energy Inc.	Moraine Wind LLC	MN	51	146,295	32.7%
Windpower Partners 1993 LP	Buffalo Ridge Windplant WPP 1993	MN	22	46,299	29.0%
Basin Electric Power Coop	Minot Wind	ND	3	3,561	20.7%
FPL Energy	FPL Energy North Dakota Wind II	ND	62	213,604	39.6%
Nebraska Public Power	Ainsworth	NE	59	60,230	45.9%
FPL Energy	New Mexico Wind Energy LLC	NM	204	512,998	28.7%
Fenner Wind Project	Fenner Wind	NY	30	51,849	26.2%
NWP Indian Mesa Wind Farm LP	Madison Windpower	NY	11	19,381	19.8%
Blue Canyon Windpower LLC	Blue Canyon Windpower	OK	74	247,638	38.1%
FPL Energy	Oklahoma Wind LLC	OK	102	313,180	35.1%
ESI Vansycle Partners LP	ESI Vansycle Partners LP	OR	25	47,435	32.5%
Eurus Combine Hills I LLC	Combine Hills I	OR	41	70,539	26.2%
FPL Energy	Vancycle	OR	263	150,649	11.2%
SeaWest WindPower Ind	Condon	OR	50	60,304	18.5%
FPL E Waymart Wind LLC	Waymart Wind	PA	65	142,044	24.9%
FPL Energy Meyersdale Windpower LLC	Meyersdale Windpower	PA	33	28,827	29.8%
Mill Run Windpower, LLC	Mill Run Windpower	PA	15	14,059	32.0%
Basin Electric Power Coop	Prairie Wind	SD	3	4,258	24.7%
Tennessee Valley Auth	Buffalo Mountain	TN	2	3,339	18.2%
AEP Texas Central Company	Desert Sky Wind Project	TX	160	468,192	33.4%
Crelo Wind Power LLC	King Mountain Wind Ranch 1	TX	278	648,548	26.6%
Delaware Mountain	Delaware Mountain Windfarm	TX	30	66,695	25.4%
El Paso Electric Co	Hueco Mount	TX	1	1,056	10.0%
FPL Energy	Pecos Wind I	TX	82	185,214	25.8%
FPL Energy	Pecos Wind II	TX	78	172,602	25.3%
FPL Energy Operating System	West Texas Windplant	TX	75	197,781	30.1%
FPLE Callahan Wind LLC	Callahan WInd	TX	114	179,254	35.6%
New World Power Corp	Big Spring Power Facility	TX	34	84,013	27.9%
NWP Indian Mesa Wind Farm LP	NWP Indian Mesa Wind Farm	TX	83	230,315	31.9%
Shell Wind Energy Inc	Brazos Wind Farm	TX	160	422,981	30.2%
Texas Wind Power Company	Llano Estacado Wind Ranch - Wh	TX	80	226,778	35.4%
Tri-Cities	Trent Mesa Wind	TX	150	492,653	37.5%
Windpower Partners 1993 LP	West Texas Windplant	TX	34	52,829	21.6%
Green Mountain Power Corp	Searsburg Wind Turb	VT	6	11,486	21.5%
Energy Northwest	Nine Canyon	WA	48	147,348	35.0%
FPL Energy	Stateline Wind	WA	166	223,056	26.3%
Badger Windpower LLC	Badger Windpower LLC	WI	30	51,247	19.5%

Diablo Winds, LLC	Diablo Wind	WI	18	46,696	35.6%
Madison Gas & Elec	Wind Energy	WI	11	18,784	19.5%
Wisconsin Electric Pwr	Byron	WI	1	2,697	25.7%
Wisconsin Public Service Corp	Lincoln Turbines	WI	9	14,028	17.8%
GH Drilling Inc	Backbone Mountain Wind	WV	66	59,657	30.9%
FPL Energy	FPLE Wyoming Wind LLC	WY	144	297,224	23.6%
Platte River Power Author	Medicine Bow	WY	6	15,016	27.6%
SeaWest Windpower	Rock River I LLC	WY	50	115,039	35.1%
Seawest Windpower Inc	Foote Creek I	WY	41	123,952	37.6%
Reporting Wind Projects in Appalachian Mountains/Eastern States			5,840	12,913,127	29.0%

EXHIBIT- TAH-3

REDINGTON MOUNTAIN WIND PROJECT TURBINE BASE ELEVATIONS

TAKEN FROM APPLICANT, MMP, APPLICATION PLANS BY BERTRAND LAMBERT, P.E.

Turbine#	Base Level (ft)	Mountain	Source
1	3900	Redington	Applicant's Sh W5
2	3990	"	" "
3	3900	"	" "
4	3890	"	" "
5	3645	"	" "
6	3550	"	W-6
7	3575	"	" "
8	3525	"	" "
9	3690	"	" "
10	3715	"	" "
11	3750	"	" "
12	3610	"	" "
13	3370	Upper Black Nubble	W-3
14	3550	"	" "
15	3700	"	" "
16	3585	"	" "
17	3465	Lower Black Nubble	W-2
18	3400	"	" "
19	3360	"	" "
20	3150	"	" "
21	3180	"	" "
22	3080	"	" "
23	3015	"	W-1
24	3060	"	" "
25	3190	"	" "
26	3130	"	" "
27	3085	"	" "
28	3030	"	" "
29	2965	"	" "
30	2875	"	" "

Exhibit TAH-4

2005 Net Generation and Retail Sales by State and Type
(Thousand Megawatthours)

2005 Market Share Calculations By Generation Type
(% of total in-state generation)

Census Division and State	Retail Sales	Total Net Generation	Solid Fuel	Nuclear	Gas	Hydro	Oil	Other Renewable	Other	Retail Pwr c/kWh	Price Rank
Alabama	89,247	137,901	56.7%	23.0%	10.3%	7.1%	0.2%	2.7%	0.0%	6.51	14
Alaska	5,892	6,842	9.7%	0.0%	58.5%	21.0%	10.6%	0.1%	0.0%	11.50	45
Arizona	69,116	101,749	39.5%	25.4%	28.7%	6.4%	0.0%	0.0%	0.0%	7.89	34
Arkansas	45,573	47,440	48.6%	28.9%	11.0%	6.9%	1.0%	3.7%	0.0%	6.25	12
California	254,045	196,486	2.3%	16.4%	47.5%	19.4%	0.1%	12.1%	0.1%	11.31	44
Colorado	48,040	49,598	72.2%	0.0%	24.0%	2.2%	0.0%	1.6%	0.0%	7.58	32
Connecticut	33,086	33,381	11.6%	46.6%	26.5%	1.3%	9.2%	4.8%	0.0%	12.02	47
Delaware	12,069	8,129	60.1%	0.0%	25.8%	0.0%	14.1%	0.0%	0.0%	7.55	30
District of Columbia	11,881	235	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	9.05	39
Florida	224,800	221,049	31.8%	13.0%	38.4%	0.1%	13.2%	2.6%	0.9%	8.76	37
Georgia	132,257	133,775	65.6%	23.6%	5.4%	2.6%	0.3%	2.5%	0.0%	7.45	27
Hawaii	10,539	11,341	14.3%	0.0%	0.3%	0.9%	77.3%	6.3%	0.0%	18.11	51
Idaho	21,864	10,760	1.0%	0.0%	14.6%	79.0%	0.0%	5.4%	0.0%	5.10	2
Illinois	144,554	194,390	47.7%	48.0%	3.6%	0.1%	0.1%	0.5%	0.0%	7.04	23
Indiana	108,530	130,388	94.3%	0.0%	4.9%	0.4%	0.1%	0.1%	0.2%	5.86	6
Iowa	43,012	44,097	76.0%	10.3%	5.7%	2.2%	0.3%	3.4%	0.0%	6.74	20
Kansas	38,737	45,729	75.4%	19.3%	2.4%	0.0%	2.1%	0.7%	0.0%	6.66	18
Kentucky	89,313	97,672	94.7%	0.0%	1.7%	3.1%	0.1%	0.4%	0.0%	4.96	1
Louisiana	77,758	92,513	26.7%	16.9%	50.0%	0.9%	2.0%	3.0%	0.4%	8.04	35
Maine	12,327	18,550	1.7%	0.0%	47.9%	19.2%	9.5%	21.8%	0.0%	9.41	41
Maryland	68,434	52,537	55.8%	28.0%	4.1%	3.3%	7.1%	1.7%	0.0%	7.83	33
Massachusetts	58,401	48,157	25.0%	11.4%	43.0%	1.2%	15.1%	4.4%	0.0%	12.12	48
Michigan	110,338	121,306	57.9%	27.1%	11.6%	0.3%	0.7%	2.4%	0.0%	7.49	28
Minnesota	66,092	52,586	64.2%	24.4%	5.1%	1.3%	0.3%	4.7%	0.1%	6.65	17
Mississippi	45,906	45,144	36.8%	22.3%	34.3%	0.0%	3.2%	3.3%	0.0%	7.57	31
Missouri	60,623	90,983	85.2%	8.8%	4.3%	1.4%	0.1%	0.1%	0.0%	6.19	10
Montana	13,270	28,089	66.2%	0.0%	0.0%	33.3%	0.1%	0.2%	0.0%	6.75	21
Nebraska	27,080	31,207	66.9%	28.2%	1.7%	2.7%	0.1%	0.4%	0.0%	5.88	7
Nevada	32,737	39,886	46.1%	0.0%	45.8%	4.2%	0.1%	4.0%	0.0%	8.87	38
New Hampshire	11,226	24,137	16.9%	39.2%	28.2%	6.0%	5.6%	4.2%	0.0%	12.46	49
New Jersey	75,978	59,252	19.4%	50.6%	26.2%	-0.4%	2.0%	2.3%	0.0%	11.17	43
New Mexico	20,349	33,795	88.6%	0.0%	9.4%	0.4%	0.1%	1.5%	0.0%	7.54	29
New York	150,246	146,613	15.0%	28.9%	22.6%	15.7%	15.7%	2.1%	0.0%	13.16	50
North Carolina	128,412	129,858	60.5%	30.8%	2.5%	4.1%	0.4%	1.5%	0.2%	7.29	25

North Dakota	10,823	30,591	94.5%	0.0%	0.2%	4.4%	0.1%	0.7%	0.0%	5.97	8
Ohio	159,654	157,732	87.4%	9.8%	1.8%	0.5%	0.2%	0.2%	0.0%	7.07	24
Oklahoma	53,335	68,190	53.4%	0.0%	41.6%	3.7%	0.1%	1.2%	0.0%	6.93	22
Oregon	46,360	49,016	7.1%	0.0%	26.8%	63.7%	0.2%	2.2%	0.0%	6.22	11
Pennsylvania	147,917	218,130	55.7%	35.0%	5.0%	0.8%	2.1%	1.4%	0.0%	8.27	36
Rhode Island	8,046	6,064	0.0%	0.0%	97.3%	0.0%	0.0%	1.8%	0.0%	11.75	46
South Carolina	81,246	102,281	39.1%	52.0%	5.4%	1.8%	0.4%	1.6%	0.0%	6.73	19
South Dakota	9,862	6,495	46.1%	0.0%	3.8%	47.3%	0.4%	2.4%	0.0%	6.61	15
Tennessee	103,696	97,139	61.1%	28.6%	0.6%	9.0%	0.2%	0.6%	0.0%	6.31	13
Texas	335,650	394,360	38.0%	9.7%	50.7%	0.3%	0.1%	1.2%	0.1%	9.06	40
Utah	25,034	37,406	95.8%	0.0%	2.0%	1.6%	0.1%	0.5%	0.0%	6.03	9
Vermont	5,890	5,616	0.0%	72.5%	0.0%	19.5%	0.3%	7.7%	0.0%	11.07	42
Virginia	108,590	78,879	44.9%	35.4%	10.5%	0.1%	5.5%	3.7%	0.0%	6.64	16
Washington	84,324	102,099	10.3%	8.1%	8.3%	71.3%	0.1%	2.0%	0.0%	5.71	5
West Virginia	30,135	93,212	98.1%	0.0%	0.4%	1.2%	0.2%	0.1%	0.0%	5.16	4
Wisconsin	70,339	60,137	70.5%	15.2%	8.9%	3.0%	0.2%	2.2%	0.1%	7.42	26
Wyoming	14,183	45,077	96.5%	0.0%	0.2%	1.7%	0.1%	1.3%	0.1%	5.13	3
U.S. Total	3,652,816	4,037,989	50.4%	19.3%	19.0%	6.4%	2.5%	2.3%	0.1%	8.08	

Source: Electric Power Monthly- March 2006 (US DOE-EIA)

CERTIFICATION

I do hereby certify that the attached document entitled;

DIRECT TESTIMONY OF THOMAS HEWSON JR
ON BEHALF OF FRIENDS OF THE WESTERN MOUNTAINS
BEFORE THE MAINE LAND USE REGULATION COMMISSION
IN THE MATTER OF THE ZONING PETITION OF MAINE MOUNTAIN POWER
LLC TO PLACE A 90 MW WIND PLANT IN REDINGTON TOWNSHIP AND
WYMAN TOWNSHIP IN FRANKLIN COUNTY, MAINE

is my direct testimony that was written by me for the MAINE LAND USE REGULATION COMMISSION as part of their proceeding on Zoning Petition ZP 702.

Signed:

Thomas A Hewson Jr 7/11/06

Thomas A Hewson Jr.
Principal
Energy Ventures Analysis Inc
Arlington VA 22209

State of Virginia, Arlington County

The above named Thomas Hewson Jr. appeared before me and made oath as to the truth of the forgoing statements.

Didi Yusum

Before me

Notary Public:

Commission Expires 06/30/2008

EXHIBIT
E

February 4, 2010

The True Cost of Electricity from Wind is always Underestimated and its Value is always Overestimated

– A detailed discussion of the facts –

– Contents –

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- Point #2: Wind turbines have little or no "capacity value" 5
- Point #3: Electricity produced by wind turbines – i.e., the kilowatt-hours – has less real value than electricity produced from reliable generating units 5
- Point #4: Large parts of the true capital & operating costs of electricity from wind are hidden because massive federal, state & local tax breaks & subsidies shift much of its true cost from "wind farm" developers and owners to taxpayers and electric customers 6
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February 4, 2010

The True Cost of Electricity from Wind is Always Underestimated and its Value is Always Overestimated

Probably the most common wind energy question that I receive from analysts, reporters, and interested citizens deals with the cost of electricity from wind. The frequency of the question is understandable since estimates provided by the wind industry, federal and state agencies and contractors, and the media *understate* the true *cost* and ignore the fact that electricity from wind is very low in *value*.

Typically, those asking the question would like a simple way to compare the cost of electricity from wind with the cost of electricity from other sources. Unfortunately, that isn't possible. For those who insist:

- The first short answer is that the true financial *cost* of electricity from wind is huge compared to electricity from reliable generating sources.

- The second short answer is that the *cost* of electricity from wind should not be compared with the cost of electricity from reliable generating sources because the *value* of electricity from wind is much lower.

Pervasive misunderstanding of the true cost and value of electricity from wind

In fact, few people in the general public, media or government know the facts about the high true cost and low true value of electricity from wind. For example, not long ago, the delegate to the General Assembly representing our district in Virginia stated repeatedly during a telephonic "town hall" that electricity from wind "is now competitive" with electricity from coal. The delegate has a degree in electrical engineering and a long record of accomplishments in electronics. His statement is consistent with claims often made by wind industry lobbyists but, unfortunately, the statement is *false*.

The delegate's false statement is understandable since the US Department of Energy (DOE), DOE's National "Laboratories" and other contractors (all paid with tax dollars), the wind industry; and other wind energy advocates have, for years, issued false and misleading claims about the cost and value of electricity from wind.

Critically important among the elements of true cost that are often understated or ignored by wind energy advocates is the huge cost of tax breaks and subsidies provided to the wind industry. Initially, tax breaks and subsidies for wind energy were justified on grounds that they were necessary to help an emerging technology compete with existing technologies for producing electricity until the technology was more thoroughly developed and demonstrated.

Federal, state and local government tax breaks and subsidies for wind energy have become so prevalent that it's virtually certain that the politicians and regulators who provide them have no understanding of their magnitude and cost. It's also virtually certain that they have not weighed benefits and costs. If they really have done either, there is no question but that they have decided to put the special interest of the wind industry ahead of the interests of taxpayers and electric customers who are paying for their largess.

Wind industry lobbyists have been exceedingly effective in winning huge tax breaks and subsidies from governments. When initially proposed, wind energy advocates argued that tax breaks and subsidies were necessary to permit a relatively "new and developing technology" to gain a foothold in competition with

other sources of energy for producing electricity. *However, industry demands for continuation, expansion and extension of subsidies have made it clear that there are no longer any serious expectations that wind energy is competitive or that improvements in the technology will eventually make it competitive.*

Instead, it appears that the only hope that wind energy would become economically competitive with traditional energy sources is if the cost of electricity from traditional sources were driven much higher – with all the adverse impacts on electric customers and local and national economies that result from high electricity prices.

Improving public, media and political leaders' understanding of wind energy costs and value

The false claims and the widespread misunderstanding about the full, true costs and the low value of electricity from wind demonstrate that it is time to focus on the facts. It would be "nice" if this could be done in a brief paper but brief papers have not been effective in getting through to people (particularly those in government and the media) who should be presenting the public and our political leaders with accurate information. Therefore, it apparently is necessary to "explain the basics" which, unfortunately, requires a long paper that delves into the details about the cost and value of electricity from wind.

Accordingly, this paper provides details on all the key factors that must be taken into account when making honest estimates of the true *cost* and *value* of electricity from wind energy. This paper will not provide numbers that can be compared because the development of valid and reliable *cost* and *value* data requires detailed information and assumptions that vary widely among "wind farms," the generation mix and electricity supply and demand situation within electric grid control areas, and other factors.

Hopefully, once the factors that affect true cost and value of electricity from wind are understood, analysts, investors, reporters, and others interested in honest comparisons of costs and value will be able to make realistic estimates of at least the *costs per kilowatt (kW of) wind generating capacity.*

But, as explained below, reliable estimates of the *cost per kilowatt-hour (kWh of) electricity produced by wind* farms will still not be possible because such estimates are entirely dependent on factors that are and will remain unknown. Assumptions (i.e., guesses) made by those who claim they know the cost per kWh of electricity from wind can easily be in error by a factor of two or more.

Whether estimating the true cost of wind generating capacity or cost of electricity produced from wind, the cost of federal, state, and local tax breaks and subsidies are dominant factors. There is no longer any serious doubt but that tax breaks and subsidies – not environmental, energy, or economic benefits -- are the primary reasons that "wind farms" are being built.

Six points critical to an accurate understanding of the high true cost and low value of electricity from wind

Comparing the "cost" of electricity from wind with the "cost" of electricity from reliable generating units is a classic "apples to oranges" comparison (or perhaps crab apples to oranges!). The things being compared may "look" similar but, in fact, are vastly different. In summary, and as detailed below, those making comparisons of the cost of electricity from wind often overlook four critically important facts:

- The full, true *cost* of electricity from wind is seldom revealed because of massive federal, state, and local government tax breaks and subsidies for "wind farm" owners.

- No one really knows the true *cost* per kilowatt-hour (kWh) of producing electricity from wind turbines because all such calculations are always based on assumptions (i.e., guesses).

- The *value* of electricity that is produced by wind turbines is much lower than the *value* of electricity from reliable generating units because the output from wind turbines is intermittent, volatile, unreliable and most likely to be produced when least needed.

- The *value* of wind turbine generating *capacity* is much lower than the *value* of the capacity of reliable generating units because wind turbines produce electricity only when the wind is blowing in the right speed range[1] so they cannot be counted on when electricity demand reaches peak levels.

Point 1: There is a fundamental difference between wind turbines and reliable electric generating units.

There is a vast difference between electric generating units that produce electricity only *intermittently,* such as wind turbines, and *reliable generating units* that can be counted on to produce electricity when it is needed. To be more specific:

1. Electricity cannot be stored in significant amounts and, therefore, must be produced as it is needed (or "demanded") by customers. Demand for electricity by customers – whether residential, commercial, or industrial -- varies widely by time of day, day of week, season of the year, prevailing weather and temperature, strength of the economy, and other factors

2. Managers of electric grids are responsible for assuring that enough electricity is always available to meet customers' demand and, while doing this, must keep the gird in balance (in terms of supply & demand, voltage and frequency) . To do this, grid managers must always have available and under their control generating units that are:

   a. *Reliable,* that is, the unit(s) must be *available or operable and have necessary fuel* so that it can be counted on to produce electricity when its output is needed, and

   b. *Dispatchable,* that is, the unit(s) must be subject to the grid manager's control so that it can be brought on line (i.e., begin production) or taken off line (i.e., stop production), and, for a unit on line, it can be ramped up or down (i.e., increasing or decreasing its output).

   In addition to keeping the grid in balance at all times, grid managers must also have reliable and dispatchable generating capacity *in reserve* , which capacity can be called upon immediately if there is an unplanned outage of one or more on line generating units (or transmission lines), or if there is a significant, unexpected increase in electricity demand.

   The wind industry often pretends that this *operating reserve* of generating capacity should be or is a "free good" that should be available for its use – preferably at no cost -- to make up for the fact that their wind turbines can't be counted on to produce electricity when it is promised or needed (i.e., the turbines have little or no real *capacity value*), especially at the time of peak electricity demand. However, cutting into a grid's *operating reserve* means that there would be less of a reserve available to its real purpose.

[1] They start producing with winds of about 6 mph, reach rated capacity around 32 mph, cut out around 56 mph, and restart about 45 mph. Much of the time they produce no electricity or only small amounts well below rated capacity.

3. *Wind turbines are not reliable or dispatchable.* They produce electricity only when the wind is blowing within the right speed range (shown in footnote #1). Their output is intermittent, volatile, largely unpredictable, and unreliable. If wind turbines are connected to the grid serving the control area, the grid manager must have reliable generating capacity immediately available to "back up" the intermittent, volatile and unreliable output from wind turbines and keep the grid in balance.

4. Generating units that qualify as *reliable* and *dispatchable* are those with turbine-generators powered by natural gas, oil, coal, nuclear energy and hydropower.[2] How quickly a generating unit can be brought on line or ramped up or down varies widely, depending on such factors as the generating technology (e.g., using steam turbine or gas turbine), the energy source, and the age and condition of the unit.

Point 2: Wind turbines have little or no "capacity value."

A critically important factor affecting the true *value* of the capacity of any generating unit is how much of the unit's "rated" or "nameplate" capacity can definitely be counted on to be available to generate electricity[3] and how much it can definitely be counted to produce *at the time of peak electricity demand in the control area.* This measure is referred to in the electric industry as the unit's "capacity value."

In fact, regardless of their "rated" or "nameplate" capacity,[4] wind turbines can't be counted on to produce any electricity at the time it is most needed; i.e., when electricity demand reaches peak levels.[5] Therefore, wind turbines really have little or no real "capacity value," as that term is used in the electric industry.

Because wind turbines have little or no real "capacity value," electric grid managers responsible for assuring the reliability of electric service must, instead, look to other generating units – i.e., those that are reliable and dispatchable for the capacity that is needed at the time of peak electricity demand. In most areas of the US, peak electricity demand is likely to occur in late afternoon on hot, weekdays in July or August.

When attempting to compare either the *cost* or *value* of electricity from wind turbines, it is important to recognize that the fact that wind turbines produce little or no electricity most of the time means that their "rated" or "nameplate" capacity is not comparable in value to the "rated" or "nameplate" capacity of a reliable generating unit. (A clear example of the "crabapple to orange" analogy.)

Point 3: Electricity produced by wind turbines – i.e., the kilowatt-hours (kWh) – has less real value than electricity produced by reliable generating units.

The true value of a kilowatt-hour (kWh) of electricity *depends on when it is produced.* Specifically, a kWh of electricity produced during periods of high or peak electricity demand has much higher value than a kWh produced when demand is low[6] (e.g., during nighttime hours in most areas of the US).

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[2] In some cases, generating units powered by biomass, trash, geothermal energy, and perhaps, solar thermal energy may also qualify as "reliable" and "dispatchable."

[3] For a wind turbine, the unit must be both operable and *have enough wind.*

[4] A generating unit's rated or nameplate "capacity" is expressed in terms of kilowatts (kW) or megawatts (MW) which is a measure of the amount of electricity that could be produced by the unit at an instant in time if the unit was producing at full capacity.

[5] For most areas of the US, peak electricity demand is most likely to occur on hot, weekday late afternoons in July or August. During these times there is little or no wind and, therefore, little or no electricity from wind turbines.

This, too, is a critically important fact when attempting to compare either *cost* or *value* of electricity from wind turbines with electricity from reliable, dispatchable generating units. The fact is that electricity from wind turbines has a lower *value* per kWh because that electricity is not only intermittent, volatile, largely unpredictable and unreliable, but it is also most likely to be produced at night and in colder months when wind speeds are adequate to spin the blades, not at times of high or peak electricity demand.

Point 4: Large parts of the true capital and operating costs of electricity from wind are hidden because massive federal, state and local tax breaks and subsidies shift much of its true cost from "wind farm" developers and owners to taxpayers and electric customers.

Wind industry officials and lobbyists as well as the politicians, regulators, and other government officials, government contractors, and non-government organizations (NGOs) that support wind industry interests, often understate greatly the true cost of "wind farms" and electricity produced from "wind farms." Sadly, some electric utility officials also participate in hiding the true costs of electricity from wind.

When initially proposed, the rationale for providing tax breaks and subsidies for wind energy was to help a relatively new technology for producing electricity compete with established electric generating technologies until advances in technology would permit wind to compete without subsidies.

However, the massive tax breaks and subsidies now available and the wind industry's well-financed lobbying efforts to preserve, expand, and extend them makes clear that there is no longer any serious expectation that electricity from wind will become competitive or that significant advances in wind technology are likely to ever permit wind to become a competitive source of electricity.

The US Energy Information Administration (EIA), in an April 2008 report,[7] indicated that federal tax breaks and subsidies during 2007 averaged $0.2337 per kWh of electricity produced by wind during 2007. However, that EIA report *underestimated the true cost of the tax breaks and subsidies for wind* because it:

- Failed to take into account either the value of 5-year double declining balance accelerated depreciation (described below) that is available for "wind farm" equipment, but not available for reliable generating units.

- Did not cover, of course, over $1 billion in additional tax breaks and subsidies for wind energy awarded in 2009 by the US Departments of Energy and Treasury (authorized by various "stimulus" measures) allegedly to create jobs in the US. As indicated below, a significant share of these awards were for projects owned by foreign entities, covered equipment manufactured in other countries, or flowed to owners of "wind farms" were already under construction or completed.

- Did not cover state and local tax breaks and subsidies for "wind farm" owners.

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[6] Indisputable evidence of this is available on web sites for Independent System Operators (ISOs) or Regional Transmission Operators (RTOs) that manage electric grids in the US. Such web sites generally provide hour by hour (or more frequent) data on the wholesale prices of electricity in competitive markets.

[7] US EIA, "Federal Financial Interventions and Subsidies in Energy Markets 2007," table 35, page 106. http://www.eia.doe.gov/oiaf/servicerpt/subsidy2/pdf/chap5.pd

Among the many federal, state and local tax breaks and subsidies[8] that reduce "wind farm" developers' and owners' costs -- while shifting those costs to ordinary taxpayers and electric customers – are the following:

A. **Federal tax breaks and subsidies.**

1. **Accelerated Depreciation (MACRS).**[9] Nearly all the capital cost of a "wind farm" – whether financed with equity or debt -- can be recovered through deductions from otherwise taxable income using 5-year double declining balance accelerated depreciation (5-yr.-200%DB). These deductions from taxable income reduce tax liability at the owner's marginal tax rate, usually $35 for each $100 deduction. All of the eligible capital cost can be written off ("recovered") over 6 tax years at the following rates – illustrated with $100,000,000 in eligible capital cost:

	Deduction from taxable income		Further reduction in income
Tax Year	% of Capital investment	Amount	tax liability (in addition to PTC)
1st	20%	$20,000,000	$ 7,000,000
2nd	32%	$32,000,000	$ 11,200,000
3rd	19.2%	$19,200,000	$ 6,720,000
4th	11.52%	$11,520,000	$ 4,032,000
5th	11.52%	$11,520,000	$ 4,032,000
6th	5.76%	$ 5,760,000	$ 2,016,000
Totals	100%	$100,000,000	$ 35,000,000

Note that these deductions from otherwise taxable income and from tax liability could be taken regardless of whether the $100 million "wind farm" investment is financed with debt or equity.[10]

Note also that, in addition to the further reduction in tax liability, this generous accelerated depreciation deduction for federal income tax purposes has two other huge benefits; specifically:

a. Prompt recovery of all the owner's equity investment. Quite likely, the equity investment by "wind farm" owners and their "tax partners"[11] would be no more than 30% with the

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[8] This summary is limited primarily to tax breaks and subsidies that benefit industrial scale wind energy. There are others benefitting smaller scale installations installed by residential, commercial, industrial, educational, and "community" organizations.

[9] MACRS stands for IRS' "Modified Accelerated Cost Recovery Systems," which prescribes the methods that can be used to "write off" capital costs (i.e., deduct the capital cost of facilities, whether financed by equity or debt, from the organizations otherwise taxable income) over a period of time that is generally shorter than the useful life of the facilities. Details of MACRS can be found in IRS publication 946.

[10] Note also that the US Congress enacted a 50% 1st year "bonus" deduction for many capital investments placed in service during 2008 and 2009 as an economic "stimulus." The effect of this "bonus" permitted "wind farm" owners to deduct 60% in the 1st, 16% in the 2nd, 9.6% in the 3rd, 5.76% in the 4th and 5th and 2.88% in the 6th tax years.

[11] To take advantage of the lucrative tax breaks, a "wind farm" owner must have substantial taxable income from sources other than the "wind farm." Developers who do not have enough taxable income merely find some other organization (often a large bank or "Wall Street" financial institution with large amounts of taxable income they wish to shelter from income taxes) that will be their "partner" and part owner for the period of time (years) that is necessary to capture the tax benefits. Then the full ownership "flips" to the developer. The developers and "tax partners" are the big winners and ordinary taxpayers who bear the burden escaped by the "wind farm" owners are the big losers.

remaining borrowed to reduce its cost. As the table above shows, all of the equity investment would be recovered thru depreciation deductions early in the second tax year and in less than 1 year if the project begins operating late in the first tax year. With no remaining *equity* investment, the owners' return on equity would be infinite.

b. A large interest free loan. The depreciation deduction continues even though all equity has been recovered. Thus, in effect, the owners receive an interest free loan, courtesy of US taxpayers for an amount equal to the debt financing.

2. **Wind Production Tax Credit (PTC).** A "wind farm" owner is eligible for a Wind PTC, currently $0.021 per kilowatt-hour (kWh), for electricity produced during the 1st 10 years of operation. The new expiration date for the PTC was extended to December 31, 2012. If the illustrative $100 million project had turbines with the combined, "rated" capacity of 50 megawatts (MW) and they operated at a 30% capacity factor[12], the turbines would produce 131,400,000 kWh of electricity each year, the owners would receive a tax credit (a direct deduction form tax liability) of $2,759,400 per year during the first 10 years of operation, thus reducing federal income tax liability by $27,594,000 over 10 years.[13]

3. **Investment Tax Credit (ITC).** "Stimulus" legislation enacted during 2008 and 2009 permits "wind farm" owners to choose an investment tax credit (i.e., a direct deduction from taxes otherwise due) equal to 30% of capital costs in lieu of the Production Tax Credit. If the "wind farm" owner does not have sufficient tax liability to use all of the ITC deduction, unused amounts can be carried forward and deducted in future years. This tax break is available for projects placed in service during 2009 and 2010 or where construction has started by 2010 and placed in service before the end of 2012. The newly authorized ITC has substantial benefits for "wind farm" owners compared to the PTC because (i) the benefit is available immediately rather than over a 10-year period and (ii) the benefit is based on capital cost and, therefore, is available regardless of the amount of electricity produced by the "wind farm."[14]

4. **Cash Grant in Lieu of ITC.** The generous 2008-2009 "stimulus" legislation also made "wind farm" developers eligible for the ITC to elect to receive a cash grant of equal value from the US Treasury in lieu of the ITC. During September 2009, The US Departments of Treasury and Energy awarded grants for "wind farm" projects totaling about $900 million. $546 million or nearly 60% of the total[15] was awarded to the Spain-based firm, Iberdrola. The Iberdrola CEO has indicated that he expects to win another $470 million in grants from Treasury and DOE during 2010.[16]

Creating jobs was, allegedly, a key reason for the $787 billion "stimulus" legislation but most of

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[12] "Capacity factor" is an "after the fact" measure determined by dividing the actual electricity production (in kilowatt-hours – kWh or megawatt-hours – MWh by the "rated" capacity times the hours in the period being analyzed (e.g., 8760 hours in a year). For the illustration above, the calculation would be as follows: Annual production of 131,400,000 kWh divided by 8760 hours x 50 MW (50,000 kW) capacity = 30% capacity factor.

[13] In reality, capacity factors may decrease somewhat as turbines age due to gearbox failures, blade cracking, and blades become fouled from insects, hitting birds and bats, etc.

[14] Separating the tax break from actual electricity production, in effect, reduces the owner's incentive to maintain turbines and other "wind farm" equipment so as to maximize production.

[15] http://www.greenjobs.com/public/industrynews/inews06694.htm

[16] http://www.wind-watch.org/news/2009/12/17/iberdrola-chief-warns-on-cost-of-green-power/

"wind farm" projects included in the $1 billion in grants awarded by Treasury and DOE on September 1 and September 22, 2009, were for (a) projects that were already completed, nearly completed or already fully committed to by the grant recipients, (b) were equipped with turbines manufactured primarily in other countries, and (c) were owned by foreign-based companies. Furthermore, "wind farms" result in very few new jobs, certainly fewer than would be created by similar investments in reliable generating units powered by traditional energy sources.

(Clearly, any claim that the huge expenditure of tax dollars that were given to owners of "wind farms" would provide significant job and economic benefits in the US cannot be taken seriously.)

5. **Loosened Requirements for tax breaks and subsidies.** The same stimulus legislation also relaxed a number of restrictions on that had applied to the tax breaks and subsidies. A report recently released by DOE's Lawrence Berkeley National "Laboratory" (LBNL) – while objectionable in several respects – provides a useful summary of generous tax breaks and subsidies now available for "wind farms." [17]

6. **US Department Agriculture Grants.** While not targeting large commercial "wind farms," a variety of renewable energy production incentives,[18] grants,[19] loans,[20] and low interest bond [21]arrangements are available for certain wind energy projects. These are also summarized in the LBNL report cited above. Some of these arrangements are available for large wind turbine projects owned by Rural Electric cooperatives and public power organizations owned by state and local governments.

7. **DOE Loan Program.** A DOE loan program intended to encourage the commercialization of "innovative energy technologies" was first authorized by the Energy Policy Act of 2005 and then was substantially expanded by the American Recovery and Reinvestment Act of 2009. Billions in loans and loan guarantees are available for various renewable energy (including wind) and energy efficiency projects. One wind project (Nordic Windpower) has been approved via this program for a $16 million loan. Final regulations for this DOE program were issued on December 7, 2009[22]

8. **Additional US Department of Energy (DOE) Subsidies.** The DOE provides several additional subsidies to the wind industry, all financed with tax dollars, including:

   a. Some $60 to $100 million per year for "wind energy R&D" contracts and grants.

   b. Additional millions in taxpayer dollars for "studies," "analyses," "reports," and other wind energy promotional information prepared by or for DOE's Office of Energy Efficiency and Renewable Energy (DOE-EERE), DOE's National Energy "Laboratories,"[23] state energy

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[17] Bolinger, Mark, Lawrence Berkeley National Laboratory (LBNL), "Revealing the Hidden Value that the Federal Investment Tax Credit and Treasury Cash Grant Provide To Community Wind Projects," January 2010; pp. 6-16. Apparently, the objective of the report is to promote "community" wind projects by outlining the generous new tax breaks made available for such projects. The report makes no attempt to evaluate the exceedingly small benefits that result from the high cost to taxpayers and electric customers of community wind projects.

[18] http://www.dsireusa.org/incentives/incentive.cfm?Incentive_Code=US33F&re=1&ee=1

[19] http://www.dsireusa.org/incentives/incentive.cfm?Incentive_Code=US05F&re=1&ee=1

[20] http://www.dsireusa.org/incentives/incentive.cfm?Incentive_Code=US46F&re=1&ee=1

[21] http://www.dsireusa.org/incentives/incentive.cfm?Incentive_Code=US45F&re=1&ee=1

[22] http://www.lgprogram.energy.gov/press/FR-12709.pdf

[23] Particularly the National Renewable Energy "Laboratory" (NREL) and the Lawrence Berkeley National "Laboratory" (LBNL)

offices, and other DOE contractors and grantees.

While the National "laboratories" undoubtedly perform some objective work that is based on scientific methods and engineering principles, much of the information issued by these organizations that deals with wind energy is demonstrably biased, misleading, and even false. These "laboratory" activities are more akin to those carried out by trade associations that typically provide one-sided information (or propaganda) that is used to influence the public, media and government officials.[24]

c. More taxpayer dollars flowing though DOE and NREL to support various state government wind promotional activities and to state "wind working groups,"[25] consisting of wind industry representatives and other wind energy advocates (but seldom, if ever, include representatives from citizen groups opposed to "wind farms") that work in support of wind industry objectives.

9. **Mandated use of "renewable" energy by Federal Agencies**.[26] The Energy Policy Act of 2005 requires the following amounts of total electricity consumed by the Federal Government to come from renewable energy:

- No less than 3% in fiscal years 2007-2009
- No less than 5% in fiscal years 2010-2012
- No less than 7.5% in fiscal year 2013 and thereafter

Presidential Executive Order 13423, issued in January 2007, requires that at least one-half of the required electricity from renewable energy come from "new renewable sources." In fact, much of the electricity from "renewable energy" purchased by federal agencies comes from wind turbines. Like mandated state "green energy" programs, this federal requirement in effect requires that federal agencies pay premium prices for part of the electricity they use, thus creating a special, high priced market that is available to "wind farms." The higher-than-market premiums that must be paid for electricity from wind are another subsidy for the wind industry. The higher prices are paid from agency appropriations which are financed through tax dollars.

10. **Public lands managed by the US Bureau of Land Management and US Forest Service**. Both agencies have policies and regulations dealing with the construction of "wind farms" and related transmission facilities on public lands that they manage. More than 300 MW of wind turbine capacity is now located on BLM-managed lands.[27] Typically, rents charged by BLM and USFS are lower than those charged for comparable private lands.

11. **Tax breaks and subsidies for "wind farm" equipment manufacturers**. One 2009 economic "stimulus" measure[28] established a new $2.3 billion investment tax credit "to encourage the development of a U.S.-based renewable energy manufacturing sector. In any taxable year, the

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[24] Examples include NREL's "Jobs and Economic Development Impact" (JEDI) model that overstates local and state benefits from "wind farms", and LBNL's recent report that claims, falsely, that "wind farms" do not adversely affect the values of nearby properties.

[25] http://www.windpoweringamerica.gov/state_activities.asp

[26] http://www.dsireusa.org/incentives/incentive.cfm?Incentive_Code=US01R&re=1&ee=1

[27] http://www.blm.gov/pgdata/etc/medialib/blm/wo/MINERALS__REALTY__AND_RESOURCE_PROTECTION_/energy.Par.58306.File.dat/09factsheetmap_Wind.pdf

[28] The American Recovery and Reinvestment Act of 2009 (H.R. 1), enacted in February 2009.

investment tax credit is equal to 30% of the qualified investment required for an advanced energy project that establishes, re-equips or expands a manufacturing facility that produces…"[29] something considered by the US Treasury and Energy Departments as an energy efficiency, conservation, or renewable energy technology, including wind energy.

The application process conducted during the fall of 2009 resulted in the selection of dozens of projects that apparently exhausted the $2.3 billion authorization. Projects selected for this new tax break included 33 projects involving wind turbines, bearings, towers, and blades totaling more than $250,000,000. Treasury and DOE have announced that no more applications are being accepted for this program.[30] *However, President's FY 2011 budget requests an additional $5 billion for the program.*

B. **State tax breaks and subsidies for "wind farm" owners.** Many state governments have adopted generous tax breaks and subsidies that benefit "wind farm" developers and owners – adding more to the costs that are shifted from developers and owners to ordinary taxpayers and electric customers and "hidden" in their tax bills and monthly electric bills.

The specific tax breaks and subsidies vary widely among states. Information for each state can be found at a taxpayer financed web site, Database of State Incentives for Renewables & Efficiency, www.dsireusa.org. Among the scores of "incentives" for industrial scale "wind farms" provided by at least one and often more states are:

1. State production tax credits (e.g., Iowa)
2. Exemptions from all or part of property taxes (e.g., Iowa, West Virginia, New York)
3. Artificially low assessments on wind turbines (e.g., Illinois)
4. Exemptions from sales tax on "wind farm" equipment and materials (e.g., Minnesota)
5. Low cost loans (e.g., industrial development bonds)
6. Renewable Portfolio Standards (RPS) that typically prescribed some percentage of a distribution utility's sales must consist of electricity produced from wind or some other "renewable" energy source (about 20 states).
7. Purchases of, or markets for, "green energy" certificates earned by producers of electricity from wind (e.g., Massachusetts).
8. "Green energy" programs by electric distribution companies that offer electricity produced from wind at a premium price – either required or encouraged by state PUC or legislature (many states).
9. Payments for "green energy attributes" using revenue collected via a "systems benefit charge" (effectively, a tax) added to electric bills (e.g., New York).
10. Higher allowed earnings for electric utility investments in renewable energy facilities (e.g., Virginia)

At least four of the above state requirements (6, 7, 8 and 9) have the effect of creating a special market where owners of "wind farms" and other renewable energy facilities can sell their electricity at above market prices. Of course, the electricity actually used by customers paying extra for "green" electricity is highly unlikely to be produced by a "renewable" energy facility.

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[29] http://www.dsireusa.org/incentives/incentive.cfm?Incentive_Code=US52F&re=1&ee=1

[30] http://www.whitehouse.gov/the-press-office/fact-sheet-23-billion-new-clean-energy-manufacturing-tax-credits

The owners can receive the higher, above market prices for the electricity they produce even if their facilities are not producing at the time the electricity is being used.

Utilities' "green energy" programs are seldom self supporting. That is, the amounts collected in premiums from customers who agree to pay extra are not adequate to cover (i) the higher costs of the "green energy" and (ii) the utility's cost of administering the "green" program. Costs not recovered from premium payments are merely passed along to all of the utility's customers.

C. **Local government and economic development agency tax breaks and subsidies**. Some local government and economic development officials believe that construction of "wind farms" in their areas will provide new jobs and other economic benefits. Actual benefits tend to be much less than assumed by "wind farm" developers and local officials. Further, the cost of any such benefits is, in one way or another, shifted to ordinary taxpayers and/or electric customers.

There is no readily available, comprehensive source of information on locally provided tax breaks and subsidies. However, examples include:

1. **Low cost loans or bond financing.** County or regional "economic development authorities" may have authority to offer low cost or interest free loans or bond financing which significantly reduce a "wind farm" owner's capital cost.

2. **Acceptance of payments in lieu of taxes or PILOTS.** For example, local government and school board officials in some towns in New York accept PILOTS from "wind farm" owners and give up their statutory authority to override a state-authorized exemption from property taxes. PILOTs are attractive to local officials because they tend to be "front-end loaded"; that is, they provide significant early benefits that can be presented to local voters as an opportunity for near term reductions in home-owners' property taxes, new fire trucks or other equipment, restoration of historic buildings, or other measures that can't be accommodated in local budgets without raising taxes. For local politicians and citizens, these may appear to be generous gifts!

   PILOTS are attractive to "wind farm" owners because their cost over the assumed life of the "wind farm" are much less than paying property taxes and the "front-end" benefits are often helpful in gaining support for projects from current town officials and, perhaps, citizens who do not take into account the lower long term benefits or impacts .

Point 5: Other important elements of the full, true cost of electricity from wind are often hidden or ignored by wind energy advocates.

Tax breaks and subsidies are not the only elements of the full, true cost of electricity from wind that are not transparent and that are often ignored by wind energy advocates. For example, additional elements of the full, true cost of electricity from wind include:

A. **Providing reliable generation to backup intermittent, unreliable generation from wind.** Because electricity from wind turbines depends on availability and speed of wind, grid managers must always have immediately available enough reliable, dispatchable generating capacity to keep grids in balance as wind turbines start producing, vary widely in output, or stop producing.

Adequate capacity is available on some grids to meet this requirement, but there are costs of providing this backup and balancing service, whether it is through the use of a unit running in automatic generation control (AGC) mode, otherwise less than full capacity, or in spinning reserve.

Grid managers must have available and under their control reliable generating units that can be ramped up or down (i.e., output increased or decreased) or brought on line (start producing) or taken off line (stop producing). Ramping up and down to balance volatile wind turbine output may add to wear and tear on the backup units.

A critically important objective in electric grid management is to have sufficient *operating reserve* capacity available to keep electric service reliable and keep the grid in balance in the event that key generating units (or transmission lines) unexpectedly become unavailable (e.g., mechanical failures or other "unplanned outages"), or if there is a significant, unexpected increase in demand. Wind industry advocates often assume, incorrectly, that this critically important grid *operating reserve* should be available as a free backup or balancing service for the intermittent, volatile, and unreliable output of wind turbines.

Providing balancing and backup capability for intermittent, volatile, and unreliable wind turbine output involves cost that is properly considered a part of the cost of electricity from wind. For example, units that are available for ramping up must be running at less than full capacity and, therefore, at less than full efficiency. Units that are ramped down also run at less than full capacity. Units that are available to bring on line are likely to be running in "spinning reserve" mode (i.e., connected to and synchronized with the grid but inputting little or no electricity) and using some fuel and putting out some emissions. These costs are really a part of the true cost of electricity from wind.

Furthermore, if adequate capacity from reliable generating units is not available, backup capacity would have to be constructed resulting in additional costs that are, at some point, passed on to customers. It must always be recognized that wind turbines do not provide reliable, dispatchable generating capacity and they cannot be counted as a substitute for such reliable capacity.

B. **"Wind farms" place an extra burden on grid managers.** Grid managers face a more difficult task in keeping grids in balance when winds are sufficient to permit wind turbines to produce electricity. Because the output from wind turbines varies with wind speed, the output that must be managed is volatile. The extent of the burden differs widely among "wind farms" and among grids depending on many factors, such as the energy source mix of generating capacity in the control area, the amount of wind generation and its volatility, and electricity demand.

The "challenges" of integrating into electric grids the intermittent, volatile and unreliable output from wind turbines has finally been acknowledged by the Chairman of FERC in a January 21, 2010, statement[31] announcing a FERC Notice of Inquiry.[32] Hopefully this proceeding will lead to greater official and media candor about the challenges of integrating the output of "wind farms" into electric grids.

C. **Electricity from wind results in higher cost of transmission.** Areas where winds are sometimes strong enough to power wind turbines are often located at considerable distance from areas where electricity is needed (i.e., "load centers"). Furthermore, "wind farms" are not welcome near residential areas, even if wind conditions may be adequate, because of the large size of the wind turbines (400+ feet or more than 40 stories tall), because of their noise and other nuisance impacts,

[31] http://www.ferc.gov/news/statements-speeches/wellinghoff/2010/01-21-10-wellinghoff-E-4.asp

[32] http://www.ferc.gov/whats-new/comm-meet/2010/012110/E-4.pdf

because of their environmental damage, and because of their adverse impacts on neighbors' property values.

The net effect of the above conditions is that electricity from wind turbines entails high costs of transmitting that electricity to the areas where the electricity can be used. Three factors are involved:

1. First, because "wind farms" are likely to be located at some distance from load centers the losses during transmission (i.e., line losses) tend to be higher than in the case of electricity generated by units closer to load centers.

2. Second, "wind farms" make inefficient use of transmission capacity. Enough transmission capacity must be available to serve the full rated output of a "wind farm." However, because wind turbines produce at full rated capacity only when wind speeds are about 32 MPH or higher, the full transmission capacity is used only on a minority, part-time basis. The effect of this is that the unit cost per kWh of moving the electricity that is produced tends to be higher than for electricity from reliable generating units.

3. Third, and especially costly, is the fact that "wind farms" have been built or are being proposed in areas that have insufficient or no transmission capacity to move the electricity that is produced. This means that expensive new transmission capacity would have to be *built just to accommodate the new or proposed "wind farms."*

   Some areas where substantial wind generating capacity has been built or is proposed require major increases in transmission capacity (e.g., Texas) to serve the "wind farms." While the cost of building the additional capacity is clearly a cost that is properly attributed to the cost of the electricity from wind, the wind industry seeks to avoid this cost and have it allocated to – i.e., charged to -- electric customers as a part of their month bills as if it is a "normal" part of the cost of providing their electric service.

   Sadly, some public utility regulators have acceded to the wishes of the wind industry. Billions of dollars are involved but the wind industry and utility commissioners hide the enormity of the costs by spreading them over all the electric customers in the area. Once again, regulators are providing another huge subsidy to the wind industry rather than protecting electric customers.

Point 6: No one really knows the true cost per kilowatt-hour (kWh) of electricity from wind turbines because all estimates of such costs are based on highly questionable assumptions – really guesses – that are untested.

Many claims are made about the cost per kilowatt-hour of electricity produced from wind but, in fact, no one really knows the true cost.

Anyone interested in the facts should be very wary of claims made by the wind industry, its supporters employed by the federal and state governments, the DOE National "Laboratories" or other wind energy advocates. Data reported by the media are invalid because they typically are parroted from one of these sources.

A true, meaningful calculation of the cost of per kWh of electricity produced by wind turbines inevitably requires data that can be known only on an after-the-fact basis. Claims that have been made about costs

per kWh of electricity from wind turbines are rough estimates based on assumptions (guesses) and often do not include all elements of cost.[33]

Key factors that cannot be known in advance include at least the following:

- Total operating and maintenance (O&M) and replacement costs during the assumed life of the turbines.
- Useful, productive life of the turbine(s).
- Amount of electricity (kilowatt-hours – kWh) that will be produced during the useful life, taking into account turbine and equipment out of service time, and deterioration in output as turbines, blades and other equipment age.
- Decommissioning costs.

None of the wind turbines of the type now being installed in the US have operating histories long enough to provide valid, reliable estimates for these factors.

Claims that are made by wind energy advocates typically include assumptions about O&M costs and replacement costs, useful life (often assumed to be 20 years), and capacity factor (often assumed to be something in the range of 25% to 35%).

Two highly simplified examples illustrate the extent to which cost per kWh calculations can be misleading if before-the-fact guesses prove incorrect. In these simplified examples which uses a rough estimate of one element of cost (i.e., overnight capital costs), *only one key factor – the estimated useful life of the turbines -- is changed* but the impact on cost per kWh is doubled.

	Example #1	Example #2
Capacity of "wind farm" (kW)	50,000	50,000
Assumed Capacity factor	30%	30%
Annual electricity production (kWh)	131,400,000	131,400,000
Assumed useful life	20 years	10 years
Electricity produced during useful life (kWh) (131,400,000 x years of useful life)	2,628,000,000	1,314,000,000
Overnight Capital Cost	$100,000,000	$100,000,000
Overnight capital cost per kWh during useful life	$0.038 per kWh	$0.076 per kWh

There is one potentially promising development in the long standing saga of DOE-NREL misinformation about the cost per kWh of electricity from wind. That is, a highly misleading, fact less, assumption based graph showing an 80% decline in the cost of electricity from wind – with further declines likely -- apparently has been abandoned. Even the highly biased DOE-EERE folks admit that their data show the cost per kWh of electricity from wind has been rising, not falling.[34] Unfortunately, there seem to be hundreds of reporters who remember the misleading graph and false 80% decline claim and will continue parroting that claim for years to come.

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[33] For example, see Harper, John, Matt Karcher, Mark Bolinger. 2007. *Wind Project Financing Structures: A Review & Comparative Analysis*. LBNL-63434. Berkeley, Calif.: Lawrence Berkeley National Laboratory. http://eetd.lbl.gov/EA/EMP/reports/63434.pdf. See Table B1, page 61 in Appendix B for detailed list of costs.
[34] DOE, 2008 Wind Technology Market Report, July 2009, Figure 13, page 26.

The preceding points are focused on financial cost and value, not externalities.

The foregoing discussion has been focused on the financial costs of producing electricity and the financial value of that electricity. It has not dealt with external costs, commonly referred to as externalities; i.e., the costs not reflected in the price charged for the electricity.

A discussion of externalities associated with each source of energy used to produce electricity is far beyond the scope of this paper. However, it should be noted that wind energy advocates generally assign high externality values to other sources of energy while assigning none for wind energy. In fact, producing electricity with wind energy does impose external costs, including adverse impacts on environmental, ecological, scenic, and property values.

Examples of adverse environmental and ecological impacts include noise, dead birds and bats, destruction of vegetation and disruption of ecosystems and wildlife habitat, and nuisance impacts such as shadow flicker. Claims that "wind farms" do not adversely affect neighbors' property values, such as those made recently in a report from the Lawrence Berkeley National "Laboratory" (LBNL) defy common sense and facts evident from around the world.

Fortunately, media stories reporting on the adverse impacts of "wind farms" have begun to appear in the media and even in the Journal of the American Bar Association.[35]

Conclusions

There are no longer any serious questions but that:

- Wind industry officials and lobbyists continue to understate greatly the full, true cost of electricity from wind and have been successful in creating a false "popular wisdom" about wind energy.

- The public, media and government officials have been misled and repeat false and misleading claims.

- Government officials – particularly legislators and regulators – are providing tax breaks and subsidies for wind energy without understanding or considering the benefits and costs of their actions, and they are helping to hide costs in tax and electric bills.

- Government agencies, including the US Department of Energy (particularly its Office of Energy Efficiency and Renewable Energy – DOE-EERE), the DOE National "Laboratories" (particularly NREL and LBNL), other DOE contractors, and state energy agencies and public utility commissions are conducting and supporting activities and issuing information about wind energy that helps mislead the public, media and political leaders.

- Claims that the hundreds of millions of tax dollars being thrown at "wind farm" projects are an efficient and effective way of creating jobs in the US are FALSE. (The fact that a large share of those tax dollars are flowing to foreign countries -- turbine manufacturers and "wind farm" owners – should be a clue that would give some pause to Obama Administration officials and members of Congress.)

- Some investors in "wind farms" are highly likely to be making financial commitments without understanding the facts about the high true cost and low value of electricity from wind.

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[35] http://www.abajournal.com/magazine/article/the_war_of_winds/

- Land owners are leasing land to "wind farm" developers without understanding the adverse impact that "wind turbines" have on environmental, ecological, scenic and neighbors' property values.

- Local government officials, misled by "wind farm" developers and lured by potential short-term financial benefits, are fracturing their communities, destroying home owners' property values, and ignoring long-term costs when they encourage or condone wind energy projects.

- Energy economists and analysts in government and the private sector, as well as reporters and editors, need a far better understanding of the facts about wind energy cost and values than they have displayed thus far.

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[36] Glenn Schleede is semi-retired after working on energy matters for more than 30 years in government and the private sector. He often writes about energy issues, particularly about policies and actions that adversely affect taxpayers and consumers.

EXHIBIT
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GOVERNOR

ELIZA TOWNSEND
ACTING COMMISSIONER

To: Marcia Spencer-Famous, LURC
From: Alan Stearns, Deputy Director, BPL ABS
Date: February 26, 2010
Re: BPL review & comment re DP4860 Kibby Expansion (Transcanada & Chain of Ponds)

****

Please find here the Bureau of Parks & Lands (BPL's) agency review and comment of the pending application DP4860 Kibby Expansion (Transcanada & Chain of Ponds).

This is the first time that BPL has commented on a wind power development proposal. This is for three reasons:

A. The pending application has a direct scenic impact on land owned by the BPL, more significant than we have seen in previous wind power applications across the state (DEP or LURC) under the newly adopted wind power laws.

B. BPL is increasingly interested in shaping the precedent being set with respect to both scenic analysis and tangible benefits under the newly adopted wind power laws. BPL drafts our comments today with an eye toward consistent comments on future or pending wind power applications both under DEP and LURC jurisdiction. BPL generally does not want to position BPL as the scenic police, as scenic experts, or as guardians of the public viewshed across private lands. In fact we genuinely fear the implications of BPL needing to comment on private viewsheds since it might actively make more difficult our relations with our abutters or out ability to acquire conservation lands. Yet with no apparent precedent and no apparent yardstick by which to objectively measure pending applications, and with few other entities stepping to the plate for agency scenic comment, BPL is gravely concerned that regulators and landowners and recreationists and advocates and applicants will face moving targets and shifting standards which benefit no one.

C. BPL may or may not become an implementing party (landowner) with respect to any mitigation or tangible benefits in the future.

BPL's expertise on these issues is limited. At the same time -- frankly -- BPL seems to possess as much expertise as offered by the applicant in this application. We are not intimately familiar with rapidly changing laws, rules, zones, and criteria. We have not followed closely LURC's recent debates on expedited zone changes, or legislative history. We did not follow LURC's analysis of the scenic impact of Kibby One under previous laws. We are not expert to review

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many wind power impacts that might affect recreational quality including noise and light. We do not have the resources or the authority to raise resources to commission expert comment beyond those comments offered today. We strongly urge LURC to consider public comment, comment from other agencies, LURC's own professional staff, and LURC's own resources to more fully analyze the pending application.

BPL REVIEW OF SCENIC CHARACTER EVALUATION

BPL #1: Overall scenic comments: The entirety of the scenic character evaluation is difficult to read to the extent that it does not clearly define the existing scenic impact of existing turbines (Kibby One), the imminent scenic impact of permitted but not built turbines (Kibby One), the proposed scenic impact from the pending application (Kibby Expansion), and the likely scenic impact from planned turbines under pending expedited zoning changes (Transcanada X). These four phases of impact speak clearly for the need for a regulatory discussion of cumulative impact, but the application doesn't even lay out enough information to begin an analysis of existing conditions and delta, let alone a full scope of likely build-out by Transcanada alone. Additional landowners or developers may also have planned developments within the same viewshed.

The rigor or quality of the applicant's analysis -- irrespective of the cumulative impact issue -- is poor as detailed further below. The entirety of the analysis and submission by the applicant is absent any expert analysis, conclusive facts, mere facts, depth of reasoning, or rational or objective standard upon which to base a precedent or finding. The rigor of the scenic evaluation in this application is dramatically different from this rigor and methodology used in the pending (not yet reviewed) Highland Plantation application. It may be different from the rigor and methodology used by other commenters. LURC should send a message to future applicants that it is the applicant's burden to provide good solid professional scenic analysis. To assist the applicants and reviewers, LURC should make clear a uniform expectation of methodology that will allow objective, rather than subject, analysis and precedent of the ultimate LURC regulatory standards of "significant compromise" and "unreasonable adverse effect."

BPL #2: Kibby Stream impacts. The applicant's discussion of Kibby Stream impacts is so vague as to disallow any conclusion. As such, without more information from the applicant or other sources, the LURC Commission should conclude that the applicant has failed to meet its burden of proof regarding significant compromise of view and unreasonable adverse impact. On Page 2 and 8 of Attachment A.1, the applicant says there "may" be visibility from the Stream. On Page 3 the applicant says "yes" re visibility. On page 9 and 10 the applicant says the project is "not likely to dominate views from Kibby Stream." On page 9 the suggestion is that "most likely" views from roads across the stream are somehow to be discounted, because the landscape is already modified by the road, and the landscape is already modified by existing Kibby Turbines. On page 11 we learn visibility is expected to be "extremely minimal."

BPL objects to the suggestion that views from an existing road across a scenic stream should be discounted because there is an existing road. The suggestion is that once a scenic is compromised at all, further compromise is not adverse. This would be a deeply troubling precedent for LURC to adopt. The applicant's proposed finding (page 11) that views

"in areas where other human landscape disturbance is evident" should not be adopted as a LURC finding, so simply.

BPL objects to the suggestion that views of existing turbines (Kibby One) from a viewpoint should allow LURC to discount additional compromise from new or additional turbines (Kibby Expansion). Similarly, this would be a deeply troubling precedent. There would be no end to the domino effect of turbines, with no construct in place for reviewing cumulative impact.

BPL has no vested interest in Kibby Stream; BPL is not a landowner of Kibby Stream, or guardian of scenic streams generally. Yet we are unsure what commenters might have this interest so we weigh in. LURC should demand a rigorous analysis of the reasons for the scenic designation, and consideration of offset mitigation. Is the stream primarily an angling stream? Is there opportunity for on-site mitigation to salvage the aesthetic angling experience? Are land protection and trail construction or parking turnouts on-site tools to save the stream from incremental or cumulative compromise? Or is the scenic nature of the stream so compromised by the industrialization of the watershed that off-site mitigation is appropriate?

BPL #3: Scenic impacts from a scenic road turnout. The applicant minimizes the existence of a state scenic byway, and the relationship of the byway to other scenic viewpoints. While the jurisdictional relevance of the byway by itself is limited to scenic turnouts, the existence of the scenic byway is important regarding statutorily required analysis of "viewer expectations" and other factors for other jurisdictional viewpoints. Instead, the applicant tries to dissect the viewpoints as separate and seldom overlapping. On page three, there is the dissection of the byway being of statewide significance, but the Arnold Trail being of national significance. From a viewers perspective or expectation, the scenic byway and the Arnold Trail are so intertwined that they both should be considered of equal significance. The introduction of the scenic byway (page 3) provides absolutely no context on the reasons for creation of the byway, the management plans for the byway, or the potential of the byway, because the applicant merely wants to dismiss the scenic turnouts as having no views of the Project. On Page 6 and 7 and 10 and 11, the audible presence of traffic is emphasized in order to discount views from the Chain of Ponds, yet BPL argues that the existence of a scenic byway has the exact opposite effect; the views from Chain of Ponds should have enhanced significance because of the goal or tourism and experience from a marketed and designated scenic byway. The applicant's proposed finding (page 11) that "Chain of Ponds is scenic but not remote, being adjacent to Route 27..." should be rewritten to emphasize the enhanced value of Chain of Ponds due to the existence of the scenic byway.

BPL #4: Scenic impact from the Arnold Trail. The applicant minimizes the amazing international military, literary, and historic significance of the Arnold Trail. BPL is but one de facto guardian of the Arnold Trail because of our landownership up and down the trail of key facilities including Coburn House, because of our on-staff expertise with BPL's staff historian Dr. Thomas Desjardin, because of BPL's collaborations with the scenic byway and Arnold Trail groups, and because of our ownership here at Chain of Ponds. The fact that "no associated structures exist in the study area" (page 5) is irrelevant or misplaced to the extent that the historic significance of the trail, especially in the study area, is precisely the vast

wilderness military march with no structures, no food, no footwear, but rich and robust literary and historic record.

The applicant's review of documentation of the Arnold Trail (page 6) is cursory and minimal. Where is the location of the Native American Natannis's former lodge? Where is the location of the treasonous decisions of Arnold's subordinates? Where is the location of key decision points resulting in starvation and abandonment of bateaux? What was the narrative as Arnold travelled the Chain of Ponds and Arnold's Pond?

The lack of detail on the significance of the views in one document should not cause this country or this state to forget the wilderness experience of this military venture.

BPL's management plan document (page 6) did not discuss the significance of the views, because BPL does not own the views; BPL's management plans are first and foremost documents regarding BPL fee ownership. The Maine Legislature has now deemed the views to be protected within reason from wind turbines. The discussion of the Arnold Trail (page 6 and 7) makes no reference to the companion scenic byway and the cross-facility interpretive potential and reality. The applicant seems to separate the impact on Chain of Ponds from the impact on the Arnold Trail. On page 10 "historical associations add to the experience" should instead read that "international historic and literary and military significance dramatically escalates viewer expectations and experience and potential for enhancement."

On page 11, the applicant's proposed findings should be rewritten to strike any suggestion that this Arnold Trail is not integrally related to Chain of Ponds views, and to strike any suggestion that Chain of Ponds is not of national significance. LURC should demand a rigorous analysis of the role of the Arnold Trail related to project impacts. The Arnold Trail -- if compromised by viewshed impacts -- is deserving of significant on-site mitigation to allow the public to better appreciate the history, even as the scenery is compromised.

<u>BPL #5: Scenic impact impact from the Chain of Ponds</u>. Beyond the points above, the application suffers from narrative specificity or objectivity. "May be visible" (page 7) is not adequately detailed for analysis. "Portions of the project would be visible" is not adequate. Those who "hug" the shore "might" see no turbines (p.10). What percentage of the viewshed is compromised to what level, by what professional and objective standard? If LURC plans to allow this compromise, what objective precedent is set, which what rigorous review of mitigating strategies? The applicant concedes that the "primary" visual impact of the project would occur on Chain of Ponds, with a mere one sentence (page 11). The proposed findings should be amended to remove words like "extremely limited."

BPL objects to the suggestion that mobile seasonal campers compromise views (p10). BPL argues the exact opposite: Modest income camping and temporary campers on a scenic byway and nationally registered historic trial are evidence that the view should be protected, rather than dismissed.

<u>BPL #6: Scenic impact from Arnold Pond</u>. The pond was named after Benedict Arnold, because of the drama of Arnold's wilderness experience coming to a turning point at this

point. Even modest impacts to this pond deserve rigorous analysis and exploration of mitigation. If the entirety of the wilderness scenic experience on this wilderness military trail is thrown under the bus for modern industrial development, we will have lost a piece of history forever. Mitigation strategies should include protection of some of the bleak grandeur of Arnold's period, at some location.

BPL #7: Scenic Viewpoints from Maine Reserve Lands (P3, P7) It is technically correct (p3) that there are no (regulatorily) identified scenic viewpoints of Maine Public Reserve Lands in the study area. Yet the applicant accurately points out that there are (perhaps non-regulatorily) identified scenic viewpoints on Maine Public Reserve Lands in the study area (p7).
The distinction between regulatory identification and non-regulatory identification is confusing and seemingly contradictory and worth clarity in any revised documents, but ultimately moot since the applicant discusses the arguably non-regulatory sites on p7 and p8. Most noteworthy are the three BPL campsites at Upper Farm where there "may be minimal project visibility...if they are located very close to Route 27...." (p8). The application should be asked conclusively whether there will be visibility, from where the campsites are actually located. Regardless, the applicant notes the poor condition of the campsites. There is an obvious opportunity for mitigation -- for the applicant to improve and appropriately locate the campsites in a location with no project visibility. These are public campsites located on a scenic byway. LURC should treat them as the applicant has, but note their statewide significance and potential. The proposed findings on page 11 should accurately reflect the impact (if any) on these campsites.

BPL #8: General BPL comments on scenic mitigation. The applicant makes no attempt whatsoever to mitigate admitted scenic impacts. BPL is well aware that there is precious little defined precedent for scenic mitigation, and that some authorities including applicants will resist the terminology, let alone its application. LURC Commissioners should be aware that LURC's staff approaches the issue with a conservative reading of LURC's power. In comments above BPL lays out some "on-site" mitigation opportunities, which might be legally distinct from "off-site" requirements or offerings. If LURC or the applicant is unable to structure mitigation or quasi-mitigation which ameliorates the obvious scenic impacts, then we shall have a failure of public purpose. LURC might be backed into a corner with a required up or down vote, with no opportunity for compromise through mitigation. *To be clear, BPL does not oppose the Kibby Expansion.* We merely seek to make the project something other than a net loss for Maine's Quality of Place. With no new precedent for mitigation of scenic impacts of state and national significance, Maine will suffer a significant and cumulating net loss of scenery of state and national significance. Or we will lose compelling renewable energy opportunities. It's that simple.

BPL #9: General BPL comments on cumulative impacts. Above in introductory comments, BPL raises the issue of cumulative impacts. The project-by-project or phase-by-phase increasing impacts of wind turbines in viewsheds simply must be scoped out for regulatory construct and regulatory precedent. If not, Maine will need to oppose reasonable projects for fear of future projects. Or in the alternative Maine will need to approve future projects for equitable treatment. And at some point the laws might need to be changed to give new tools, or in response to overwhelming public concern with permitted or foreseeable cumulative impacts. Cumulative impacts from a regulatory perspective sometimes seem academic or too

complex to address. With wind turbines, a solution should be achievable and perhaps must be achieved to prevent future backlash. Otherwise our most scenic viewpoints will become unintentionally dominated by multiple sequential decisions.

BPL #10: Stranded BPL assets, stranded recreational assets. This issue does not appear to raise itself in this application. It is an issue BPL will raise in other pending applications before LURC and/or DEP. Public comment may reveal stranded assets related to this application. Are there features or potential features on Maine Public Reserve Land (picnic site potential or trail potential or campsite potential) that effectively disappears because of viewshed impacts?

BPL #11: Impact on BPL conservation strategies. BPL has not in the past three years had active conservation land acquisition goals in the project area. As such, the scenic degradation will not specifically impact BPL's conservation or acquisition priorities or programs. At the same time, if developed with wind turbines, land in the region will "score" less well for any future momentum toward acquisition of conservation lands, and may be less likely to generate popular or institutional momentum for conservation. In some limited areas of Maine, the converse is true that windpower development has stimulated community momentum for land conservation as a competitive strategy for land use. BPL doesn't see this converse reaction happening in this project area. Other entities might be expected to comment on the impact of this project on other entities' conservation strategies. Importantly, BPL notes apparent significant Canadian conservation lands nearby, and wonders what nearby private conservation strategies or priorities might exist. Mitigation efforts of windpower developers, thus, become an important potential tool for the project area if there are goals for conservation acquisitions in the future, rather than stagnation of conservation acquisition activity. Transcanada has the opportunity to prove that windpower development can be "win-win" for land conservation in the affected region. If windpower development ends up being disconnected from Maine's land conservation strategies, there will be a building popular disconnect or resentment.

BPL REVIEW OF TANGIBLE BENEFITS

BPL #12: Tangible benefits: The applicant offers no tangible benefits that relate to recreation or land conservation. BPL urges review of legislative and regulatory intent. My impression is that the tangible benefits requirement is designed to off-set or quasi-mitigate the negative effect of turbines on the host location, including but not limited to scenic impact. To the extent that the application proposes a negative effect on the Chain of Ponds region, tangible benefits for Stratton and Eustis should not suffice.

BPL requests the opportunity for ample time to review and comment on any late-submissions of tangible benefits packages that relate to recreation or conservation. Jointly with SPO, BPL plans to increasingly comment on issues including land conservation permanence, adequacy, stewardship, credibility of holders of conservation easements, and other factors. One-time cash settlements with NGOs for programmatic needs or simple brochures should not suffice, unless with credible demonstration and affirmative reporting requirements of measurable (tangible) results (benefits.)

Last-minute submissions of conservation packages – either tangible benefits or mitigation – which are negotiated "off-campus" with NGOs or potential opponents should be reviewed suspiciously by LURC. If LURC can establish clear regulatory standards, precedent, or expectations then relatively routine windpower development applications such as Kibby Expansion would not need to be treated as case-by-case off-campus deal-making exercises.

LURC's establishment of precedent should be carefully crafted. The Kibby One project included an escrow payment for alpine conservation. It's not my impression that that precedent originated as a result of scenic impact analysis. "Double counting" or blurring of various mitigation requirements and tangible benefits should be actively discouraged through objective accounting and delineation.

The fact that the applicant can credibly start out of the gates with no land conservation or scenic or recreational tangible benefits or mitigation --- for a project with obvious negative effects -- illustrates a flaw in the process or law that must be remedied by some party, especially to prepare for future project applications or currently pending much more significant (from a scenic perspective) project applications .

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EXHIBIT
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STATE OF MAINE
LAND USE REGULATORY COMMISSION

TRANSCANADA APPLICATION FOR PROPOSED	)
METEROLOGICAL TOWER INSTALLATION	)
ASSOCIATED WITH THE SISK WIND	)
POWER PROJECT	)

FRIENDS OF THE BOUNDARY MOUNTAINS
OBJECTIONS TO MET TOWER APPLICATION AND REQUEST FOR LAND USE REGULATION COMMISSION CONSIDERATION AND FOR A PUBLIC HEARING

INTRODUCTION

Friends of the Boundary Mountain ("FBM") objects to the Application of TransCanada Maine Wind Development ("TransCanada") to install a meteorological tower ("met tower") on Sisk Mountain in the Unexpedited Permitting Area, Chain of Ponds Township, Franklin County, Maine. To our knowledge, this is the first application to site a met tower in an Unexpedited Permitting Area since the passage of PL 661, 123rd Legislature, Second Regular Session, "An Act To Implement Recommendations of the Governor's Task Force on Wind Power Development" and as such it deserves careful, plenary consideration by the Commissioners of the Land Use Regulatory Commission ("LURC") after a public hearing.

The July 2, 2009 amendment to the Application by TransCanada to reduce the number of met towers from four to one does not cause FBM to withdraw its opposition. In fact FBM's opposition is strengthened because the amendment draws into question the need for any met towers. If one met tower can substitute for four without any adverse effects on TransCanada's need for evaluation of sites, why cannot TransCanada substitute measurements from its neighboring Kibby Project for the one? *See*, TransCanada's July 1, 2009 Petition to Initiate Commission Rulemaking to Add to the Windpower Expedited Permitting Area (the "Petition") at 12 (data from the Kibby Project indicates the suitability of the wind source for the proposed Sisk

The same public policy considerations support the need for the Commission to hold a public hearing on the pending Application. Under Section 4.04(5)(b) of the Commission's Rules of Practice, the Commission will hold a public hearing on a permit application in its discretion after consideration of the "degree of public interest and the likelihood of that information presented at the hearing will be of assistance to the Commission in reaching its decision." The manner in which LURC processes applications relating to wind projects within the Unexpedited Permitting Area under the recently enacted Chapter 661 is of obvious public interest. In addition, as explained below, the Application is deficient in many significant respects the significance of which needs to be explored by examination of witnesses in a public hearing.

FBM'S OBJECTIONS TO THE APPLICATION

There is a fundamental problem running throughout TransCanada's Application. Notwithstanding the size of the Application in pages, detail is lacking in the Application and evidence of on the ground field survey work is minimal. The attitude underlying the Application is that the project is limited, temporary and unlikely to cause adverse effects and therefore LURC should simply take the word of TransCanada that there is no reason for concern and that it can be trusted to carry out the project without rigorous review and oversight by LURC. *See* ,letter of Juliet Browne, Esq. to LURC dated June 29, 2009 at 2 (no public hearing is necessary because of the "routine nature and minimal impacts of the proposed project"). FBM urges LURC, for the following reasons, to reject this approach.

A. TransCanada's Application is Too Conclusory and Conditional.

The Application of TransCanada is riddled with conclusory and conditional statements that do not permit a proper review and evaluation of the proposed installation of a met tower on environmentally fragile mountain ridges.

For example, in Exhibit H (Erosion and Sediment Control Plan), TransCanada states that for new trails, "[s]tumps, ground cover, and forest duff layers will not be removed *unless necessary to allow for safe travel of equipment*." Exhibit H at 4. [Emphasis added.] There is no actual description of the extent to which such removal *will be* necessary. Then it is stated that "[a]voidance of very steep slopes, wetlands, and stream crossings was also considered and incorporated *as much as practical*." Id. [Emphasis added.] Yet there is no description of the extent to which avoidance was not practical or why it was not practical. It is stated that "[*t*]*o the extent practical*, new trails will avoid all wetlands, streams, and slopes steeper than 15%." Id. at 7. [Emphasis added.] The extent to which these cannot be avoided is not disclosed. Then it is stated that "[s]oil disturbance will be avoided *to the maximum extent possible* …" Id. [Emphasis added.] The actual level of soil disturbance is not disclosed. Along the same lines, Exhibit H states that "trails or portions of trails that cross wetlands, streams or steep slopes will *be avoided when practical*," Id. at 8 [Emphasis added.], that "stream crossing required to access met tower locations will be temporary, *to the extent possible*", id. [emphasis added.], that *"[i]f it is determined* that the site is appropriate for a permanent crossing, an engineering assessment of this site will be performed …." id.[emphasis added] , that a "[s]ilt fence generally will not be used … [h]owever, the case may arise where a sediment barrier will be necessary to prevent excess or unreasonable movement of soils," id. at 11, that *"[i]n general*, mulch will only be used in areas where bare soil has been exposed by large equipment …, id. [emphasis added], that "[p]ermanent stabilization with mulch *may be* accompanied with seeding." id. [emphasis added.], that *"[i]n most areas* of disturbed soils with slopes less than 15 percent, hay or straw mulch will be applied …, id. [emphasis added.], that "[i]t is not anticipated that water diversions will be used, *except as a last resort*." Id. at 15. [Emphasis added].

The amendment to the Application continues in the same vein. It states that "wetland impact has been kept to a minimum, and the trail has been realigned to avoid wetland *impact to the extent possible*." [Emphasis added.] Again there are no objective details backing up these assertions.

None of the detail missing from the Soil Erosion Plan is furnished in other sections of the Application, such as Attachment B (Details of Proposed Work) or Attachment C (Natural Resources Assessment). At best, the conclusory and conditional statements are simply repeated, *see, e.g.,* Attachment C at 1 ("[m]inimal soil disturbance will result from installation of the met towers") although in some cases they are contradicted, e.g., whereas as Exhibit H at 4 says that stumps and top soil would not be removed, *unless necessary*, in Attachment C at 7 it is stated that "[s]tumps and topsoil will not be removed" at all.

The net effect of all these generalizations and qualifications is that TransCanada is asking LURC to accept its good intentions and predictions without the ability to objectively evaluate the extent of the resource damage for the proposed project. This is an issue that FBM would like the opportunity to pursue in a public hearing.

B. <u>Objections Based on the Extent of Roads and Clearing Above 2700.</u>

The Application asserts that '[n]o new roads are proposed to access the met tower sites or install met towers," Attachment B (Details of Proposed Work) at 8, but this is not true. TransCanada proposes new trails of .85 in length requiring 1.79 acres of clearing when clearing for the met tower is added. Application Attachment C (Natural Resource Assessment) at 7 and July 2, 2009 amendment letter at 2. According to the agency comments of David Rocque, Office of the State Soil Scientist, dated March 19, 2009, TransCanada "would essentially be constructing a road." This clearing will all take place above 2700 in a fragile, sensitive area with

"cryic soils that exhibit thixotropbic properties" according to Mr. Rocque. Disturbance of this kind of soil structure can induce rapid and mass movement and destabilization of sloped sites.

In the Kibby Project, David Rocque stated that all Western Mountains share similar, unique soils and hydrologic conditions, including cryic soils, boulder covered surface areas, very steep slopes, shallow depths to bedrock, shallow groundwater tables, numerous drainage ways and groundwater seeps that put severe limitations on the ability to build roads without a significant threat to the environment. This potential damage would be exacerbated if, as TransCanada suggests in its Application at Exhibit H (Erosion and Sedimentation Control Plan) at pg.7, that the clearing "may require stump removal and excavation to level the trail surface." TransCanada has not submitted specifics about the new access trails to enable LURC to assess whether the proposed trails are planned for areas with the least severe soil and hydrology. The simple reality is that the soils, hydrology and slopes in mountain environments such as Sisk Mountain are not suitable for road construction at all and if new access routes are necessary there are significant challenges to limiting adverse environmental effects. More detail is necessary than is provided in the Application to allow LURC to properly evaluate the potential for damage to the natural hydrology of the ridge areas and the extent of soil erosion and sedimentation on Sisk Mountain.[3] A soil survey was promised in the original Application, see Attachment S-3-A, but in the amendment to the Application none was provided. More troubling, TransCanada's offhand dismissal of the risks and potential damages, as when it represents the work as a routine, temporary project with minimal clearing that will have no "adverse impacts to the natural communities found in these areas", see Attachment C at 7, is cause for concern about the

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[3]. Also, there is a conflict between David Rocque's objection to the use of silt fences to control soil erosion and TransCanada's insistence on the use of such devices because it is standard best practices that needs to be resolved.

company's appreciation of the adverse environmental risks and its commitment to mitigate potential adverse impacts.

C. Objections Based on the Use of Heavy Machinery.

Another area of concern on the part of FBM is the proposed use of heavy equipment on Sisk Mountain. Again, as in other areas of the Application, TransCanada is dismissive, saying that "erosion is not expected to be a specific issue for the proposed project" because the large equipment will only be used "for a short timeframe during clearing." Exhibit H (Erosion and Sedimentation Control Plan) at 4. This is an extraordinarily insensitive statement given the type of machinery being proposed for use on the project and the severity of slopes (5-30%) that need to be traversed to reach the site of the project. According to the Application, the met tower installation will require transportation of the materials on a sled or rubber track 4x4 or a logging skidder, Attachment B (Details of Work) at 8, and "[c]learing, along the trail and at the four planned met tower locations will be performed using a harvester (or other logging equipment). Exhibit H at 4. "A small backhoe/excavator will also be needed to install ground anchors. Geotechnical equipment will include a track mounted drill rig and all terrain vehicles." Id. According to David Rocque, State Office of the Soil Scientist, "[t]hese large pieces of equipment travelling up and down the [steep] slopes on soils easily susceptible to rutting, may pose a problem if they are used other than the driest summer months." Id. David Rocque suggests use of a mower/grinder in place of standard logging equipment and the placement of ground trees and the upper part of stumps on the trails to create a driving surface. TransCanada's response to this concern is -- that the project land belongs to others -- is a totally inadequate as the project land has, according to the Applicant, been leased to allow the project.

The Application states that geotechnical survey work will start when the "trails are cleared and conditions suitable for equipment travel on the trails." Exhibit H (Erosion and Sedimentation Control Plan) at pg. 7. However, no specifics are given to TransCanada's definition of "suitable conditions" and no limitations on the use of trails by season are suggested.

The Application describes in Attachment S-2A at 3 how it will dispose of slash, unmarketable trees and brush generated from clearing above 2700 feet, but it is silent on the question of how it will deal with the valuable wood cut to make clearings. In normal forestry operations, use of heavy, destructive machinery would be needed to perform this task.

The use of equipment, even if modified as requested by David Rocque, underscores the adverse environmental impacts of pending Application and the need for greater detail in the Application and restriction on the time of year and the type of equipment to be used if the met towers are allowed.

D. Objections Based on the Soil Suitability.

As mentioned, a soil survey was promised in the Application, but none has been provided. Without a proper soil survey, the Commission does not have sufficient information to evaluate concerns about the adverse impact from the construction activity in the fragile mountain environment as described in the two preceding portions of this Objection. The Application should be tabled until a soil survey is done.

E. Objections Based on Possible Blasting

The Application states that it may be necessary to do some blasting to remove bad quality rock that is unsuitable for rock anchors, and that, if such blasting is done, TransCanada will follow state and federal regulations. *See*, Application, Attachment B (Details of Proposed Work) at 9. Blasting could create seeps and fractures in rock bed and change the movement of

hydrology significantly. This was a significant concern of the State Soil Scientist in the Kibby Wind Project. TransCanada should be required to tell LURC whether blasting will be required or not and, if it is, it should be required to submit a pre-blasting survey and a blasting plan in accordance with 38 M.R.S.A. §490-Z.14, Maine DEP Rule 06-096-CMR-375, and other applicable state and federal regulations to show how it will comply with standards for use and storage of petroleum products, control of adverse impacts on ground vibration, airblast and flyrock and management of potentially reactive rock.

F. Objections Based on Wildlife Resources

1. Noncompliance with USF&WS Guidelines.

In its Application, TransCanada admits that its met tower construction cannot comply with the September 14, 2000 guidance document published by the USF&WS for tower installation designed for the protection of wildlife resources, although it accompanies this admission with the usual precatory language that "measures will be taken throughout the use of the proposed structures to monitor and minimize impact to the extent possible." Attachment C (Natural Resource Assessment) at 1. Exactly how this will take place is never disclosed. Again, TransCanada seems to want to ignore risks identified by other agencies. Whereas the September 14, 2000 guidance states that the "construction of new towers creates a potentially significant impact on migratory birds," TransCanada is dismissive, asserting that "[m]et towers, such as those proposed, have a minimal potential to result in collision impact to birds and bats." Id. Among the guidelines TransCanada would ignore is using existing towers to assess potential wind power. TransCanada says this cannot be done, but does not disclose why more than a simple general statement that new towers are required because of the "complexity of the terrain." Id. Another guideline (#3) which calls for the consideration of the cumulative impact of other

towers in the area (i.e., on Kibby), are simply ignored. Another of the guidelines (# 7) proposes daytime visual markers; TransCanada states there is no need. Attachment C at 2. IF&W disagrees. See comments of Robert Cordes dated March 31, 2009. The guidelines suggest use of downshields. Guideline # 10. TransCanada simply states none will be used. Basically, TransCanada concludes that guidelines do not have to be followed because "[i]mpact potential has been minimized." Id. at 3. Again FBM does not accept TransCanada's repeated generalizations that this project does not need to be closely reviewed for adverse impacts.

2. Concerns about the Golden Eagle

In addition to disregard of these guidelines, TransCanada dismisses concerns about Golden Eagle nesting. The Application acknowledges that there are historical records of Golden Eagle nesting on the southern slope of Sisk Mountain, but then brushes the issue aside by stating that the proposed development is 1.5 miles away and that no Golden Eagle nesting had been observed. Attachment C at 3.

The Golden Eagle is Maine's rarest breeding bird. It is protected by the Bald and Golden Eagle Protection Act, 16 U.S.C, 668-668c, which prevents Golden Eagles from being disturbed, including disturbance from construction activity. In Maine, Golden Eagles have been typically associated with mountainous areas in the western and northwestern portions of the State that would include the Boundary Mountains. , IF&WL has adopted a management plan for the protection of the Golden Eagle with the goal of protecting historic Golden Eagle nest sites for the future recovery of the species in Maine. Historic sites need to be protected because that is where Golden Eagles will seek to nest as they return to Maine from Canada. The historic nest identified in the Application is one of only 12 such nests known to exist in Maine. Robert Cordes of the IF&W commented on February 10, 2009 that the project site of TransCanada has the potential

for support of eagles "currently".[4] In addition, IF&W recommendations for road construction warn that construction of roads greater than ¼ mile should be avoided when built in areas highly visible from cliff nest sites. This is another area that needs to be explored in a public hearing.

3. Concerns About the Canadian Lynx.

TransCanada's Application is silent as to any impacts that the proposed met tower project or subsequent wind power project may have on Canada lynx and Canada lynx habitat. This is a serious deficiency in the Application considering the accumulated evidence of the presence of lynx in the area and the requirements of the Endangered Species Act ("ESA"), 16 U.S.C. § 1531 et seq. Under Section 9 of the ESA, it is illegal for any person to "take" (i.e., to harass or harm) any endangered species except when permitted under a conservation plan. 16 U.S.C. § 1539. The USF&WLS listed Canada lynx as a threatened species in 2000. The lynx is also listed as a State Species of Special Concern in Maine. On February 25, 2009, USF&WLS issued a revised federal critical habitat designation for the Canada lynx (74 Fed. Reg.) to include Merrill Strip, which abuts Chain of Ponds Township. In addition, the State has been mapping lynx habitat, which appears to include townships in Franklin County (such as T2 R4 WBKP (Tim Pond) and T2 R3 WBKP (Lang)] that are south of the federally designated critical lynx habitat. Furthermore, in the Winter of 2008, Canada lynx tracks were discovered, verified, and reported to the USF&WLS by TransCanada's consultant on the Kibby Project. Given the probable impacts of a Sisk Wind Power Project on Canada lynx in and around their critical habitat, it is a serious flaw in TransCanada's Application for met tower(s) on Sisk Mountain to omit any discussion of Canada lynx.

G. Objections Based on Vegetation/Natural Communities.

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[4] In fact,, a biologist employed by TransCanada recently confided to a member of FBM that golden eagles had in fact been identified in the area

The Application is also dismissive of potential adverse impact on vegetation and natural communities. The Application acknowledges that there are two *known* occurrences of state listed species but that this is of no concern because the proposed project will not encroach on them. However, no mention is made of any field surveys for unknown rare botanical features in the project area. In fact, Janet Gannon of the Maine Natural Areas Program of the Maine Department of Conservation in her comments dated February 9, 2009 points out that the lack of data in its Botanical and Conservation Data System may indicate the absence of survey efforts rather than the absence of botanical features. She recommends that "the site be inventoried by a qualified field biologist to ensure that no undocumented rare features are inadvertently harmed." FBM joins in that request.

Likewise, Don Cameron of the Maine Natural Areas Program states in his comments dated March 19, 2009 that there should be mapping of the Fir-Heart-leaved Birch Subalpine Forest Natural Community before any subsequent applications for construction on site. FBM request that this mapping be done now so that known issues about the Sisk Wind Project can be assessed in a timely manner and not incrementally.

VIII <u>Objections Based on Proximity of Historic Sites</u>

The Application state that Benedict Arnold Trail, which is on the National Register of Historic Places, runs through Chain of Ponds and the toe of Sisk Mountain's southern slope. Attachment S-2B (Scenic Character, Natural and Historic Places) at 4. TransCanada says the view of the met towers from the Arnold Trail "are limited." However, the met tower will be visible and FBM objects on those grounds.

CONCLUSION

For the reasons stated above, the FBM urges the Commission to undertake a plenary

review of the pending Application and hold a public hearing top review the objections to the Application set forth herein.

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