STAFF RECOMMENDATION
Accepted ___ Accepted As Amended
Reversed and Rewritten ___
Tabled ___ Public Hearing

STATE OF MAINE
DEPARTMENT OF CONSERVATION
MAINE LAND USE REGULATION COMMISSION
22 STATE HOUSE STATION
AUGUSTA, MAINE
04333-0022

JOHN ELIAS BALDACCI
GOVERNOR

PATRICK K. McGOWAN
COMMISSIONER

STAFF RECOMMENDATION

COMMISSION DECISION
IN THE MATTER OF

Maine Mountain Power, LLC
Zoning Petition ZP 702
Preliminary Development Plan

Findings of Fact and Decision

The Maine Land Use Regulation Commission, at a meeting of the Commission held on January 24th, 2007, at Farmington, Maine, after reviewing the application and supporting documents submitted by Maine Mountain Power, LLC for Zoning Petition 702, public and Intervenor comments, agency review comments and other related materials on file, pursuant to 12 M.R.S.A. Section 681 et seq. and the Commission's Standards and Rules, finds the following facts:

1 Petitioner: Maine Mountain Power, LLC
57 Ryder Road
Yarmouth, ME 04096

2. Date of Completed Petition: February 8, 2006

3. Dates of Public Hearing: August 2 to 4, 2006

4. Date the Public Hearing Record Closed: August 21, 2006

5 Location of Proposal: Redington Township, Franklin County
Wyman Township, Franklin County

Redington Pond Range: centroid - latitude 45 degrees, 1'; longitude 70 degrees, 23.5'
Black Nubble Mountain: centroid - latitude 45 degrees, 1.25'; longitude 70 degrees, 27'

6. Current Zoning: (P-MA) Mountain Area Protection Subdistrict
(P-SG) Soils and Geology Protection Subdistrict
(M-GN) General Management Subdistrict

(P-SL) Shoreland Protection Subdistrict
(P-WL) Wetland Protection Subdistrict

7. Lot Size: 1,004 acres in two parcels (owned)
Redington Pond Range: 517 acres
Black Nubble Mountain: 487 acres

8. Size of Existing Subdistricts to be Rezoned and Proposed Subdistrict: 1,000.5 acres of P-MA Subdistrict and 3.5 acres of P-MA/P-SG Subdistrict to (D-PD) Planned Development Subdistrict

9. Affected Waterbodies: Redington Pond, Caribou Pond, and Flagstaff Lake; Nash Stream, Stony Brook, Orbeton Stream, and the South Branch of the Carrabassett River.

Redington Pond is a management class 5, resource class 2, accessible, developed lake with a significant fishery and scenic characteristics.

Caribou Pond is a management class 7, resource class 2, accessible, undeveloped lake with a significant fishery.

Nash Stream, Stony Brook, and Orbeton Stream are class A streams. The South Branch of the Carrabassett River is a class AA stream.

Existing Conditions

10. The two parcels to be rezoned are located in Redington Township, Franklin County, and contain Redington Pond Range (elevation 4,010 feet) and Black Nubble Mountain (elevation 3,670 feet). The parcels are located four miles from the Sugarloaf Ski Resort, four miles from Route 16, five miles from the Bigelow Preserve, six miles from the Saddleback Ski Resort, seven miles from the town of Stratton, nine miles from the Town of Carrabassett, and ten miles from the Town of Rangeley. At the closest proximity, the summit of Redington is approximately one mile from the Appalachian Trail (AT), and the summit of Black Nubble is approximately four miles from the AT. The existing access roads not within the parcels to be rezoned are in Redington Township, Coplin Township, and Wyman Township.

11. The 50 MW Boralex Stratton Energy biomass plant is located in Stratton. The transmission line from the plant to the Bigelow substation in Carrabassett Valley runs across the southern end of Wyman Township.

12. Within Redington Township, parcels abutting the parcels proposed to be rezoned include the U.S. Navy survival training facility to the south, and land owned and actively managed for timber by Dallas Company to the west and north. The Navy facility comprises approximately 12,500 acres of the southern half of Redington

Township. A large area of land owned by Plum Creek in Carrabassett Valley that is actively managed for timber abuts the east side of the Redington parcel.

13. Timber harvesting operations have resulted in a network of existing land management roads in the northern half of Redington Township and adjacent Coplin Plantation.

14. Residential properties located in the project vicinity include several homes and camps along Route 16 and Route 27 in Coplin Plantation, Wyman Township, and Carrabassett Valley. The Sugarloaf Ski Resort and other commercial facilities such as stores and residences near the ski resort are located along Route 27.

Proposal

15. On February 8, 2006, the Commission accepted for processing a proposed Preliminary Development Plan and Zoning Petition ZP 702 submitted by Maine Mountain Power, LLC (MMP). MMP is jointly owned by Endless Energy Corporation (EEC) and Mission Wind Maine (MWM), MWM is owned by Edison Mission Maine (EMM). Redington Mountain Windpower (RMW), LLC, which is managed by EEC, owns the parcels to be rezoned. RMW also owns, leases, or holds option agreements on the land that would not be rezoned but where the access roads, transmission lines, and a maintenance facility would be located. RMW assigned the development rights to MMP (see Finding of Fact #48 for Title, Right, or Interest).

Petition to Rezone

16. The petitioner proposes to rezone approximately 1,004 acres from P-MA (Mountain Area Protection) Subdistrict (1000.5 acres) and P-MA/P-SG (Soils and Geology Protection) Subdistrict (3.5 acres) to D-PD (Planned Development) Subdistrict for the purpose of constructing a 90 megawatt (MW), thirty (30) turbine Redington Wind Farm on Redington Pond Range and Black Nubble Mountain. The 1,004 acres to be rezoned are located in two parcels: 517 acres on Redington Pond Range and 487 acres on Black Nubble Mountain. A 3.5 acre portion of a P-SG Subdistrict is imbedded within the P-MA Subdistrict on Black Nubble, but the remainder is located outside the parcel to be rezoned.

17. *Demonstration of need.* The petitioner stated that its objective in proposing the wind farm is to provide a clean, renewable source of electricity in an economical and environmentally sound manner.

A. The benefits of the proposed Redington Wind Farm (RWF), as advanced by the petitioner:
   (1) The petitioner stated that the RWF would provide benefits as an indigenous, renewable power source.

(a) The RWF would be a significant source of renewable energy, capable of producing approximately 260,000 MWhrs per year, or 2.2% of Maine's current power consumption of 12 billion kWh per year. Wind farms are one of Maine's best options for producing low-cost energy from indigenous sources, and hydroelectric dams are the other. Both windpower and hydroelectric dams have a high initial capital investment, but after installation the cost of producing energy is low compared to other sources such as coal, biomass, nuclear, or natural gas. In addition, power produced by fossil fuels and nuclear power either involve a fuel source that pollutes or presents serious waste disposal problems.

(b) The proposed RWF would help stabilize electricity prices and power production in Maine. The development of renewable energy sources will help reduce Maine's over-dependence on natural gas, which has driven electricity prices up; decrease volatility in the market; and decrease the potential for serious interruptions in power in New England (see Findings of Fact #60 and #61). In 2005, the Independent System Operators of New England (ISO-NE) stated that unless more power generation plants are built, the New England region will be facing a shortage of power within two to four years.

(c) The RWF would reduce air pollution by displacing natural gas or other generators using fossil fuels within the New England power system, resulting in the reduced emissions of up to 732,188 pounds of pollutants per day, mostly of CO_2, but also SO_2 and NO_x. A wind farm can produce power indefinitely without creating pollution.

(d) The RWF would have long-term economic sustainability. The petitioner asserted that, overall, renewable power sources, including wind, are low cost power sources because although they require higher up-front capital costs, long-term operation cost is very low because there is no cost of fuel. Operation and maintenance costs are slightly higher than hydroelectric dams, but considerably lower than thermal plants. Although Production Tax Credits (PTC) are used to help many types of renewable energy power production be competitive, the amount needed to make windpower competitive with fossil fuel energy production is small.

(2) The petitioner stated that the proposed RWF would help promote economic development in Maine and in Franklin County, as follows:

(a) The RWF would produce competitively priced renewable energy that will be offered first to Maine customers by Constellation New Energy, Inc. Ten-year, fixed price contracts would reduce volatility and price increases. The power is being sold in combination with Renewable Energy Credits (REC), which also may be sold by the consumer to reduce their net costs (see Finding of Fact #52,D).

(b) Up to approximately 100 design, engineering, and construction jobs would be created for local companies during construction. The

petitioner has contracted with local companies, and would continue to do so whenever possible.

(c) During construction, other local and State businesses would provide services and materials.

(d) Approximately ten long-term maintenance and operations jobs would be created.

(e) The estimated yearly property taxes paid to Franklin County and the State of Maine would be approximately $1 to $1.5 million.

(f) Except for the gated high elevation areas, and during mud season, access roads developed for the project would be available for use by the public and by timber companies. The higher elevation areas would be open to non-motorized travel, except where there may be a public safety risk.

(g) The petitioner has been working with the Western Mountains Foundation (WMF), which is interested in establishing a cross-country ski trail across the proposed RWF site (see Appendix A, Section 9). The petitioner would explore any other recreational opportunities that would not interfere with the safe and economical operation of the wind farm.

(3) Over the past decade, Maine has recognized the importance of developing additional renewable power sources, including windpower, and has been aggressively pursuing this goal. The petitioner stated that the proposed RWF would help Maine meet its renewable energy goals and be consistent with State policies and programs.

(a) The proposed RWF would be consistent with Maine's Renewable Energy Policy to increase power produced in Maine by renewables by an increment of 10% by 2017. L.D. 1929 (2004), entitled "*An Act to Promote Economic Development in the State by Encouraging the Production of Electricity from Renewable and Indigenous Sources*", added the "Maine Wind Energy Act" to Maine's statute [35-A, M.R.S.A. c. 34], and states:

> "The legislature finds that it is in the public interest to explore opportunities for and encourage the development, where appropriate, of wind energy production in the State in a manner that is consistent with high environmental standards and that achieves reliable, cost-effective, sustainable energy production on those sites in the State that will attract investment and permit the development of viable wind energy projects."

(b) Maine was the first state in the nation to adopt a greenhouse gas law (PL 2003, c. 237) to plan for reducing air pollution. The Maine Department of Environmental Protection (MDEP) was directed to develop a climate change action plan to lower carbon dioxide (CO_2) emissions to 1990 levels by 2010, 10% below 1990 levels by 2020, and by 75% to 80% over the long term.

(c) Maine's Renewables Portfolio Standard (RPS), which creates a market for renewable energy sources, requires 30% of Maine's power to be

produced by renewable or efficient sources (plus an increment of 10% as described in (b) above). In New England, renewable sources presently produce approximately 8.5% of the region's power, with 90% coming from fossil and nuclear sources. Maine produces more of its power from renewable sources than other New England state, primarily hydroelectric, but has several gas-fired plants operating.

(d) The Maine Public Utilities Commission (PUC) presented a report on windpower to the Legislature in January of 2005, which concluded that "there is substantial potential for windpower development [in Maine]" and "a sufficient market exists".

(e) The Renewables Resources Stakeholder Group, formed during the 2005 legislative session, is examining renewable generation in Maine and mechanisms appropriate for encouraging new, cost-competitive renewable generation, including wind. A report is due by the end of 2006.

(f) Maine's State Energy Program, "Clean Energy Maine," encourages individuals and businesses to purchase "green" energy to make Maine "a better place to live, work, vacation and raise a family," and "to help reduce Maine's dependence on foreign oil."

B. *CMP/ISO-NE System Impact Study (SIS).* In accordance with ISO-NE standards, a SIS was conducted for the proposed Redington Wind Farm to assess the interconnection of the new electricity generator, and to identify any issues associated with the reliability of the transmission system as it is integrated. The draft SIS was included with the petition submitted in January 2006. In its June 2, 2006 responses to agency comments, the petitioner stated that following the final approval of the SIS, ISO-NE and Central Maine Power Company (CMP) will conduct a Facility Study, and then will negotiate an Interconnection Agreement with MMP. The SIS included a Steady State Analysis and a Stability Study, the results of which were included in a report prepared by CMP (dated May 30, 2006) and in the Final ISO-NE/SIS Report (dated July 13, 2006).

(1) A SIS Summary Report by ISO-NE (July 2006) provided a "comprehensive report of the various analyses performed by ISO-NE and CMP as part of the SIS performed for the Redington Mountain Windpower Project." The summary listed the necessary technical components of the facility and transmission line, the needed Network Upgrades and Interconnection Facilities, which the petitioner would finance, and the needed Reliability Transmission Upgrades to CMP's system, which the petitioner would not be responsible for. The thermal and stability analyses performed by CMP, and ISO-NE's stability study were included.

(2) The transmission of energy in New England is regulated by federal and regional agencies. In 1996, the Federal Energy Regulatory Commission (FERC) restructured its regulatory approach to the energy industry, leading to the creation of ISO-NE. ISO-NE assumed control of the bulk power system in New England between 1997 and 1999, and began operating the New England Power Pool in accordance with FERC provisions. As a part of ISO-NE's

oversight of energy transmission, potential new generators apply to have their project assessed, studies are conducted, and the new generator is placed in a queue of approved projects.

(3) The RWF first applied for Interconnection Service on January 5, 1999 as a 30 MW project, and later on June 16, 2005, applied for an increase in the capacity of the project by an additional 60 MW for a total project capacity of 90 MW.

C. *Public opinion survey and outreach activities*. The petitioner informed local political and business communities, citizens, educators, recreation groups, and environmental groups about the proposed RWF prior to submitting the petition. In 1994 and 2003, the petitioner conducted public opinion surveys using a questionnaire and photo-simulations to gauge support. In 1994, 75% to 84% of local hunters, skiers, hikers, and snowmobilers gave the project a neutral or positive rating. Of hikers alone, 51% gave a neutral or positive rating. In 2003, a survey of hikers found 75% of respondents were in support or neutral (see Finding of Fact #46,B). Finally, the survey conducted for the petitioner in April 2006 found that 65% of those surveyed supported the proposed RWF, 7% opposed, and 28% expressed no opinion.

D. *Public support for the proposed wind farm.* Since 2002 the petitioner gathered more than 2,000 signatures in support of the proposed wind farm. The original signatures were retained by the petitioner, but were made available upon request (see public hearing Exhibit #11,J). With the petition, the petitioner submitted letters supporting the RWF, including from the Greater Franklin Development Corporation, the Maine Electric Consumers Coalition, and the Physicians for Social Responsibility. Letters and editorials in support published in the Sun Journal, Portland Press Herald, Kennebec Journal, Maine Sunday Telegram, and Morning Telegram were also included. Finally, the petitioner included letters from hikers in support of the RWF from hikers printed in the Appalachian Trailway News, AMC Outdoors, and the AT Journal from 2002 to 2005 (see Finding of Fact #75 for additional information on public support).

18. *Consistency with the Commission's <u>Comprehensive Land Use Plan</u> (CLUP).* The petitioner asserted that the proposed wind farm would be consistent with the goals and policies of the CLUP, as follows:

A. The petitioner quoted the Energy Resources section of Chapter 3 (CLUP, p. 40):

(1) "Maine's wind resource is considerable, and much of it occurs along high mountain tops and ridges within the jurisdiction. These winds have the potential to power wind energy technologies that appear to compete with more traditional energy sources."

(2) "As a renewable form of energy, windpower offers an attractive alternative to the burning of fossil fuels. Large windpower installations, however, have the potential to conflict with other values of the jurisdiction, particularly those

associated with mountain areas, the areas where windpower developers have focused their efforts to date."

B. *Chapter 5, Goals and Policies.* The petitioner cited the following goals and policies from the CLUP, and asserted that the proposed RWF would be consistent. [Note: Public hearing testimony presented by the petitioner in support of the proposed RWF's consistency with the CLUP is summarized in Appendix A, Section 1,A]

(1) *Air resources*. The petitioner stated that the RWF would contribute to the improvement of air quality, and is consistent with the Commission's policy to "encourage state, federal and international initiatives directed at reducing emissions of air pollutants." (CLUP, p.135) (see Finding of Fact #17,A(3))

(2) *Energy resources*. The petitioner asserted that the need for the RWF as a new energy development and its benefits for the people of Maine have been demonstrated (see Finding of Fact #17), and that the project has been developed to minimize the intrusion on natural and human resources in every practicable way. The petitioner further stated that the proposed RWF would be consistent with the Commission's policies to "permit new energy developments where their need the people of Maine has been demonstrated and they are sited, constructed and landscaped to minimize intrusion on natural and human resources" and to "encourage energy conservation and diversification and the use of indigenous renewable resources to increase the State's energy self-sufficiency." (CLUP, p. 136)

(3) *Forest resources*. Although the petitioner stated it has no specific plans to harvest timber, the majority of the 1,004 acres to be rezoned would remain forested and available for land management activities. The parcels are in tree growth tax status, and a Forest Management Plan has been developed (see Finding of Fact #28). The petitioner asserted that the proposed RWF would be consistent with the Commission's policy to "discourage development that will interfere unreasonably with continued timber and wood fiber production, as well as primitive outdoor recreation, biodiversity, and remoteness, and support uses that are compatible with these uses." (CLUP, p. 136)

(4) *Mountain resources*. The petitioner quoted the CLUP's policy to "regulate high mountain areas to preserve the natural equilibrium of vegetation, geology, slope, soil, and climate, to reduce danger to public health and safety posed by unstable mountain areas, to protect water quality, and to preserve scenic values, vegetative communities, and low-impact recreational opportunities." (CLUP, p. 137-138)

The petitioner stated that when planning the project and choosing the routes for the proposed roads and transmission lines, mechanisms for minimization of visual, wildlife, and wetland impacts were incorporated to the extent possible, as follows: The turbine locations were adjusted to protect a high value habitat for the northern bog lemming. Various road design and erosion control techniques were developed to maintain slope hydrology. After construction, more than one-third of the cleared area would be allowed to revegetate. In addition, the petitioner studied avian and wildlife use of the

project area, including Bicknell's thrush. Finally, post-construction plans would be developed in consultation with MDIFW to protect and monitor the high elevation areas.

(5) *Special natural areas*. The petitioner asserted that the proposed RWF would be consistent with the Commission's policy to "identify and protect natural areas that possess unique physical features, or which serve as habitat for rare, threatened or endangered species or representative plant communities (CLUP, p. 138)." The petitioner conducted surveys to identify sensitive natural areas and wildlife habitat, and incorporated protection of these resources into its Preliminary Development Plan (see Finding of Fact #45,H(6) and I(1)).

(6) *Wetland resources*. The petitioner stated that to "ensure that development projects in wetlands avoid, minimize, restore, reduce or eliminate over time and/or compensate for functional wetland losses" (CLUP, p. 139) surveys and assessments were conducted to identify the wetland resources in the project area, resource agencies were consulted about protection of these areas, and wetland impacts were avoided and minimized to the greatest extent possible (see Finding of Fact #45,F).

(7) *Wildlife and fisheries resources*. The petitioner asserted that the proposed RWF would be consistent with the Commission's policies to "protect wildlife habitat in a fashion which is balanced and reasonably considers the management needs and economic constraints of landowners," and "encourage management of fisheries and wildlife resources to maintain their habitats, diversity, and populations." (CLUP, p. 139) The petitioner surveyed the wildlife resources in the project area to determine the impact potential, where possible designed the project to minimize impacts on those resources, and proposed post-construction management and monitoring mechanisms (see Finding of Fact #45).

(8) *Scenic resources*. The petitioner asserted that the proposed RWF would be consistent with the Commission's policy to "regulate land uses generally in order to protect natural aesthetic values and prevent incompatibility of land uses (CLUP, p. 139)." The petitioner conducted a visual assessment of the project vicinity, taking into account the view in the entire project area, as well as existing land uses and public resources, and where possible incorporated design elements to minimize the visual impact of the RWF (see Findings of Fact #24,D; #26; #29; and #46).

<u>Consistency with Section 10.21,G of the Commission's Land Use Districts and Standards</u>

19. *"Best reasonably available site."* In addition to the overall general discussions throughout the petition and public hearing, testimony presented by the petitioner specifically to support that the proposed RWF would utilize the "best reasonably available site" [Section 10.21,G,8,a(2)] is summarized in Appendix A, section #1,D(1). (Note: The "best reasonably available site" criterion is applied for D-PD Subdistricts in lieu of the adjacency criteria typically applied to a rezoning.) Testimony presented by the Intervenors and expert witnesses on this subject can be found in Appendix A, sections #2; #3,D; #4; #6; and #10,A.

20. In addition to the materials submitted with the petition (see Findings of Fact #17, #51 and #52), the review comments by the Maine Office of Energy Independence and Security (OEIS) and PUC (see Findings of Fact #60 and #61), and general discussions throughout the petition, testimony submitted by the petitioner specifically to support that (a) the proposed "project is realistic, can be financed and completed" and that a "sufficient market exists for the services the development will provide; and (b) if the proposed Preliminary Development Plan incorporates an "equivalent measure of protection as was afforded by the original Subdistrict" (pursuant to Sections 10.21,G,8,a(5) and (7)) is summarized in Appendix A, sections #1,D(2); and #1,G. Testimony specifically addressing these subjects presented by the Intervenors can be found in Appendix A, sections #3,D; #3,N; #7; and #8.

Preliminary Development Plan

21. Within the area to be rezoned, the proposed Preliminary Development Plan for the windfarm includes 30 wind turbines on two ridgelines (Redington Pond Range and Black Nubble Mountain), new ridgeline and access roads, above and below ground communication and transmission lines, and two meteorological towers. In addition to the wind farm that would be located within the D-PD Subdistrict, the proposed Preliminary Development Plan also includes the associated infrastructure development to be located outside the proposed D-PD Subdistrict: new gravel access roads, upgrades to existing gravel access roads, above-ground and below-ground transmission lines, a new substation near Nash Stream, two stump dumps, a maintenance facility, and a temporary concrete batch plant. The activities outside the D-PD Subdistrict would be located within Redington Township and Wyman Township.

22. The total area to be affected for the proposed RWF, both within and outside of the proposed D-PD Subdistrict, during construction would total approximately 307 acres: 158.4 acres for transmission line corridors; 105.3 acres for the turbine strings, meteorological towers, and ridgeline roads; 37.8 acres for new and upgraded access roads; and 5.6 acres for miscellaneous activities. Of the 307 acres, above 2,700 feet in elevation 135.8 acres would be affected for the turbine strings, ridgeline roads, access roads, transmission lines, and meteorological towers on both Redington and Black Nubble. After construction, 51 acres would become revegetated, for a post-construction total alteration area of 85 acres above 2,700 feet in elevation. [Findings of Fact #24 to #27, #30 to #33, #36, and #37 provide the details of the types of alterations proposed.]

23. *Site access.* Within Coplin Plantation and Redington Township, International Paper owns the existing land management road (the so-called "IP Road") that would provide the primary access to the site. Other existing land management roads in Coplin Plantation and Redington Township providing site access include Quill Hill Road, Nit Picking Ridge Road, East Branch Road, and Black Nubble Road. A total

of 12.5 miles of new access roads are proposed, of which 0.8 mile would be temporary. Title, right, or interest providing access was submitted (see Findings of Fact #48 and #49).

Activities within the proposed (D-PD) Planned Development Subdistrict

24. *Turbines.* The proposed windfarm would include two strings of turbines, configured with 12 turbines on Redington Pond Range and 18 turbines on Black Nubble Mountain. The turbines would be the Vestas V90 model, with an output of 3.0 MW per turbine, for a total installed capacity of 90 MW for the proposed windfarm. Each turbine tower, including the nacelle, would be (80 meters) 262 feet high. The rotor blades would have a length of 44 meters (144 feet). The total turbine height would be 410 feet at the tip of the blade when extended to its highest point. The elevations of the turbine locations range from 3,050 feet to 3,990 feet on Redington Pond Range, and from 2,700 feet to 3,705 feet on Black Nubble Mountain.

A. *Foundations.* Two types of foundations are proposed: gravity (approximately 56 feet in diameter) and rock anchored (pinned directly to bedrock). Geotechnical borings on Black Nubble Mountain provided a preliminary assessment of the types of foundations likely (reference Advisory Ruling AR 05-45). The type of foundation at each turbine site (reference Advisory Rulings AR 06-19 and AR 06-28) would be identified in the Final Development Plan.

B. *Turbine and crane pads*. A 50 foot by 160 foot area would be cleared and graded next to the ridgeline road for each turbine. Crane pads (25 feet by 240 feet) would be added to three of the turbine base pads to assemble the 32 foot wide crane used to erect the turbines.

C. *Lighting.* As required by Federal Aviation Administration (FAA) for structures over 200 feet in height (see Finding of Fact #70), fifteen of the 30 turbines (six on Redington, nine on Black Nubble) would be lit at night using two red, slow on/off lights per nacelle. Several factors were considered: lighting of the perimeter of a wind farm is sufficient to indicate a large object to pilots [U.S. Department of Energy, National Renewable Energy Laboratory, 2002]; red lights are less intrusive to humans than white lights; and night-migrating birds may be attracted to steady burning red lights.

D. *Lightning and icing protection.* The Vestas V90 turbine is equipped with a lightning protection system from the tips of the blades to the foundation that allows current to by-pass the blade, nacelle and tower without damage. The Vestas V90 turbine is also designed to minimize icing. Any ice that accumulates is shed by melting, wind, flexing of the blades, and the very smooth surface. Ice throw is not expected to damage the surrounding vegetation, and site access by people will be limited. Many wind farms in the United States operate at high elevations in winter conditions. However, under extreme wind or icing conditions, the turbines may be shut down temporarily.

25. *Ridgeline roads*. The proposed new ridgeline roads (all roads within the proposed D-PD Subdistrict) on Redington Pond Range (3.6 miles), and Black Nubble Mountain (4.9 miles) would total 8.5 miles. The ridgeline road proposed for Redington Pond Range would have one access point. The ridgeline road proposed for Black Nubble Mountain would have two access points. The length of the access roads outside the D-PD Subdistrict is included in Finding of Fact #31. The areas to be cleared for the roads are described in Finding of Fact #36. The proposed ridgeline roads would have a 32 foot wide traveled surface during construction to accommodate the crane, but would be allowed to revegetate to 12 feet wide after construction.

    A. *Winter construction*. The proposed schedule for the wind farm to be on-line by December 31, 2007 (see Finding of Fact #43) resulted in proposing construction of some sections of the new access roads and ridgeline roads during the winter. Various measures were discussed with the MDEP road engineer and the State Soil Scientist to address their concerns for winter construction. Findings of Fact #58 and #59,A provide additional details.

    B. The proposed slope access roads would be gated to prevent unauthorized vehicle access. The existing IP Road is typically gated during winter and spring.

26. *Transmission lines.* An electric collecting system to interconnect the turbines, consisting of the 34.5 kV lines, fiber optic communication cables, telephone lines, and other communication wires, would be laid under the ridgeline roads or road shoulders, except for the underground line connecting turbines #19 and #20, which would not be within the roadway. After leaving the Black Nubble ridgeline road near turbine #13, the 34.5 kV line would run underground for 1,500 feet, and then be above-ground for 700 feet before leaving the P-MA Subdistrict. The above-ground portion of the 34.5 kV line on Redington Pond Range would start near turbine #1 and would be run down-slope behind the ridge to decrease its visibility from the AT (see Findings of Fact #36 and #37).

27. *Meteorological reference towers (2).* An 80 meter tall (262 feet) permanent wind measurement tower would be located at the western end of each ridgeline to calibrate the turbines. The towers would be reduced to 60 meters tall (196 feet) after the turbines are calibrated.

28. *Forest management.* The parcels proposed for rezoning are in tree growth tax status. The petitioner submitted a forest management plan that identifies 462 acres of Redington Pond Range with marketable wood and recommended cutting within the next ten years. The plan for Black Nubble Mountain identified re-growth from previous logging operations, and recommended no cutting for 50 years. The Black Nubble parcel has been used for timber harvesting for over 100 years. Although the petitioner has no specific plans for harvesting the parcels within the D-PD

Subdistrict, any marketable timber removed to clear the transmission line corridors would be sold.

29. *Setbacks*. Within the D-PD Subdistrict, twenty of the turbines would be set back less than 400 feet from the D-PD Subdistrict boundary, which is also the property boundary line. Measuring from the extended tip of the blade, the turbines would be set back at least 25 feet from the property boundary lines. Measuring from the base of the turbine, the turbines would be set back at least 166 feet from the property boundary lines. The petitioner has obtained easement agreements from abuttors Dallas Company and Plum Creek to allow the turbines to be set back less than 400 feet of the property boundary with their parcels. The U.S. Navy was informed of the proximity of the proposed turbines to their parcel, but stated to both the petitioner and to LURC staff that it declined to comment in writing.

Activities outside of the proposed (D-PD) Planned Development Subdistrict

30. *Transmission lines.* The combined total length of all proposed transmission lines outside the D-PD Subdistrict would be approximately 11.3 miles.

A. *34.5 kV lines.* The proposed above-ground 34.5 kV line from the D-PD Subdistrict on Black Nubble to the Nash Stream substation would be 1.2 miles long. The proposed new above-ground 34.5 kV line from the D-PD Subdistrict on Redington to the Nash Stream substation would be 2.6 miles long. The corridor width for these lines would be 75 feet. The lines would be single-pole, cross-arm construction.

B. *115 kV transmission line.* A new 115 kV transmission line would be constructed, running 7.5 miles from the proposed Nash Stream substation to the existing Bigelow substation near Route 27 in Carrabassett Valley. Of the 7.5 miles, an approximately 3 mile long section would be located in Carrabassett Valley, which is under review by the Maine Department of Environmental Protection (reference pending MDEP permit #L-22691-L3-A-N).

The proposed above ground transmission line would first run north within a 150 foot wide corridor from the Nash Stream substation to the Redington Township/Coplin Plantation border, and then east along the border within Redington Township to the Carrabassett Valley border. The line would then run north along the township border within Carrabassett Valley to the Wyman Township/Carrabassett Valley town line, and then east to the existing Boralex Stratton 115 kV line. The above-ground line would continue east on a 75 foot wide corridor adjacent to the Boralex line to a point approximately 600 feet west of Route 27. Finally, the above-ground line would extend to Route 27 within a 150 foot wide corridor, and then would be placed underground to cross Route 27 at a point approximately 100 feet from Route 27. The underground line would then run along the Route 27 right-of-way to the Bigelow substation in Carrabassett Valley.

31. *Access roads and ways.* The proposed access roads outside the D-PD Subdistrict include new access roads on Black Nubble and Redington, upgrades to existing roads, access to the Nash Stream substation, temporary access roads for transmission line construction, and permanent ATV access ways for transmission line maintenance.

    A. *Upgrades to existing land management roads and crossings.* The petitioner would access the project area by 11.5 miles of existing land management roads (see Finding of Fact #23). To facilitate access by the large machinery needed during construction and installation of the turbines, these roads would be widened and crossings improved. Existing stream crossings would be upgraded to a load-bearing capacity of 90 to 100 tons.

    B. *New gravel access roads, crossings, and access ways.* Approximately 4 miles of new access roads with water crossings would be constructed outside the proposed D-PD Subdistrict. These roads would include 1.8 miles on Redington and 1.3 miles on Black Nubble, a 0.1 mile road extension for the Nash Stream substation, and 0.8 mile of temporary access roads for transmission line construction. None of the temporary access roads would require water crossings, and these roads would be closed out after construction. The access roads to the turbine strings on Black Nubble and Redington would range from 12 feet to 20 feet wide, with eight foot wide by 200 foot long widened areas added every ½ mile during construction. The roads would be 20% narrower than the industry standard, and the wider road would be used only where necessary, such as at turns.

    Transmission line access ways. Ten foot wide, permanent access ways for ATV use would be constructed to provide access to the 115 kV and 34.5 kV transmission line corridors for maintenance and inspection after construction of the wind farm.

32. *Nash Stream substation.* The two 34.5 kV transmission lines from the turbine strings would converge at the proposed Nash Stream substation and be stepped up to one 115 kV transmission line. The proposed Nash Stream substation would be located in Redington Township near the junction of Nit Picking Ridge Road and East Branch Road. An existing 0.5 mile long access road would be extended 0.1 mile to provide access to the substation site.

33. *Maintenance facility.* A maintenance facility would be constructed on a five acre lot on Nit Picking Ridge Road. The facility would consist of a 40 foot by 60 foot maintenance building, driveway, and parking area. There would also be a "lay-down" area to deliver, store, and maintain the equipment needed to construct the windfarm. The five acre lot is leased to the petitioner, is within the M-GN Subdistrict, and would be located approximately 1.5 miles from the nearest point of the parcels to be rezoned to D-PD Subdistrict.

Maintenance plan. The petitioner submitted a draft maintenance plan for the wind farm to be implemented during construction and operation. The plan includes the wind turbines, access roads, electrical equipment and transmission lines, and the maintenance facility.

34. *Stump disposal areas.* Any excess stumps resulting from clearing for the turbine installation and for road construction that are not otherwise ground and used for erosion control or buried in the roadways would be disposed of at two stump disposal sites less than 2 acres in size located in the M-GN Subdistrict along the proposed Black Nubble and Redington access roads. The sites were selected by a licensed forester.

35. *Water use and temporary concrete batch plant.* During construction of the turbines, a temporary concrete batch plant would be set up on an approximately six acre site. The facility may also include an aggregate storage area, three office and storage trailers, three 1,500 gallon tanks of concrete adders, two 10,000 gallon water tankers, and a 2,000 gallon fuel tank. The exact location of the batch plant has not yet been identified.

The quantity of water needed for construction of the turbine foundations was estimated to be 836,250 gallons per month for two months. The amount needed for road dust control during construction would be approximately 816,000 gallons during the construction period. The Maine Geologic Survey (MGS) determined that the amounts of water needed are not expected to be large enough to adversely impact local water bodies (see Finding of Fact #65).

Clearing

36. *Cleared area above 2,700 feet in elevation.* The total area to be cleared above 2,700 feet in elevation for construction on Black Nubble and Redington would be approximately 136 acres, including the turbine and crane pads, ridgeline roads, access roads, transmission line corridors, and meteorological reference towers. Of the 136 acres to be affected, 51 acres would be allowed to re-colonize with native vegetation after construction, leaving 85 acres permanently altered. This acreage includes the transmission line corridors, which would retain a shrub layer.

A. *Turbine and crane pads, and meteorological reference towers.* Approximately 5 acres on Redington and 8 acres on Black Nubble would be cleared for the turbine and crane pads and the meteorological towers. These estimates include the cut, fill and grading around each pad. After construction, portions of the pads and the areas around the meteorological towers would be allowed to revegetate.

B. *Roads.* A total of approximately 112.5 acres would be cleared on Redington and Black Nubble for the ridgeline and access roads. The average width of the cleared area for the ridgeline roads during construction would be 90 feet, for a total of 92 acres (39 acres on Redington, and 53 acres on Black Nubble). The

average width of the areas cleared for the access roads would be 60 feet, for a total of 20.5 acres. After construction, the roads would be allowed to re-vegetate back to a width of 12 feet.

C. *Transmission lines*. The total area to be cleared for the transmission lines on Redington and Black Nubble outside of the roadways would be 10.2 acres. On Black Nubble, the transmission line would be underground for 1,500 feet and above-ground for 700 feet before going below 2,700 feet in elevation. On Redington the above-ground corridor would be 5,000 feet long before going below 2,700 feet in elevation. The underground line corridor would be 12 feet wide, and the above ground corridor would be 75 feet wide. After construction, the underground line corridor would be allowed to revegetate. Above-ground corridors would be maintained at 75 feet wide with a shrub layer only.

37. *Cleared areas below 2,700 feet in elevation.* A total of approximately 171 acres would be cleared below 2,700 feet in elevation for the proposed RWF. Areas to be cleared include the transmission line corridors, new and expanded access roads, the maintenance facility, stump disposal areas, and the Nash Stream substation. The areas counted toward the project total have in large part already been harvested and are in various stages of succession. The majority of the clearing would be for the transmission line corridors, where only the tree layer would be cleared, leaving the shrub and herbaceous layers intact, except for the permanent ATV access ways. Most of the areas to be cleared would be within the M-GN Subdistrict. Clearing within P-SL Subdistricts and P-WL Subdistricts, such as where transmission lines or roads cross a stream, has been minimized to the extent possible (see Finding of Fact #57,A(6) and B(1)).

<u>Soils, erosion and sedimentation control, and storm water management</u>

38. *Soils.* The topography of the parcels in the project area ranges from almost 0% at the summits to more than 33% on the steepest slopes. Soils in most of the turbine pad and road areas are either potentially highly erodible or highly erodible, while one soil type may include areas of hydric soils (*i.e.* wetland soil). Many of the soils in the transmission line corridors are either potentially highly erodible, or highly erodible, while three of the types, although not hydric, have a seasonally perched water table during periods of excessive precipitation. One soil type in the transmission line corridors may include areas of hydric soils.

39. *Erosion and sedimentation control plans*. The erosion and sedimentation control plans describe site conditions, identify the measures to be employed, set standards for implementation, and lay out a process to assure the contractor follows and is responsible for implementing the plan.

A. The "*Erosion and Sedimentation Control Plan for Roadway Construction*" would be used during construction of all roadways, including the ridgeline and access roads; upgrades to existing roads; the access roads to the transmission

lines and the Nash Stream substation; and for construction of the maintenance facility. Among other things, the plan identifies procedures to be used in critical areas: on steep slopes, areas within designated viewsheds, areas near natural resources, areas above 2,700 feet, and on slopes over 25%. The plan places limitations on the size of denuded areas and describes temporary and permanent erosion control measures. In particular, the plan provides the measures to be employed when encountering seepages and other hydrologic features on slopes.

B. The "*Erosion and Sedimentation Control Plan for Transmission Line Construction"* would be used during installation of the above-ground 34.5 kV lines and the 115 kV line transmission lines and poles. The underground 34.5 kV line would be covered by the roadway plan described above.

40. *Storm water management plan.* The petitioner submitted a storm water management plan, including a phosphorus evaluation for the proposed RWF, stating that the project area is not in the watershed of a lake, river, stream or brook most at risk from development, as defined by MDEP (Chapter 502).

Among other things, the report addresses pre-development conditions, including groundwater seeps and subterranean water flow, road construction in high elevation areas and on steep slopes, and existing flow regimes. The petitioner stated that by implementing the storm water management plan, little difference is anticipated between pre- and post-development flows. In accordance with the recommendations made by the State Soil Scientist for maintenance of hydrology (see Finding of Fact #58), frequently placed culverts and maintenance of subterranean flow will avoid or minimize hydrologic alteration. Discharge from the culverts would be dispersed to forest buffers beyond the fill slopes of the road. The most important element of the road construction for protection of water quality is phasing the construction to minimize the area to be denuded at any one time. This requirement is discussed in detail in the erosion and sedimentation control report for the roadways.

Phosphorus evaluation. Because the project would create a disturbed area of more than one acre in the direct watershed of a body of standing water 10 acres or greater in size, phosphorous control standards must be met in accordance with LURC's Chapter 10 standards. The evaluation was conducted in accordance with the "*Phosphorus Control in Lake Watersheds: A Technical Guide for Evaluating New Development.*" (MDEP, 1992) The petitioner has proposed provisions that will limit phosphorus export from the site after construction so the project will not exceed the allowable phosphorus allocation for the water bodies. The phosphorus calculations would be updated to reflect any changes during final design.

The petitioner consulted with MDEP staff, who determined that the phosphorus standards for Flagstaff Lake and Redington Pond would need to be met. For Flagstaff Lake, calculations showed that a limited amount of buffering would be required to reduce the phosphorus export by 0.10 lbs. The petitioner designated buffers that would reduce the phosphorus export by 1.85 lbs., leaving an additional

1.75 lbs. available for development at such locations as the maintenance center. The phosphorus export to Redington Pond was calculated to be 2.81 lbs. less than allowed, and additional treatment is not required.

41. *Buffers.* Where roads are near, but do not cross, streams or wetlands, buffers would be maintained in accordance with LURC's standards in Section 10.27,D, at a minimum (see Finding of Fact #57,A(6)). Within transmission line corridors, the tree canopy must be cleared and vegetation maintained to a height of no more than 15 feet. Where wetland and stream crossings could not be avoided, buffer strips of higher vegetation will be maintained.

    A 250 foot buffer would be placed around the three wetlands identified by the petitioner as potential northern bog lemming habitat, and a management and monitoring plan for the area will be prepared for the final development plan. The plan would include guidelines for construction, a road shoulder re-vegetation and maintenance plan, and a post-construction habitat monitoring plan. Wooded buffers would be maintained, and the establishment of non-native grass and herbaceous species that could facilitate the introduction of competing or predatory small mammals would be controlled (see Finding of Fact #45,I and Appendix A, Section 1,B,3(d)).

42. *Blasting.* Extensive blasting of open rock and trench rock removal would be required for the proposed windfarm. The petitioner submitted a report detailing the extent of blasting anticipated and the procedures to be followed. Blasting is expected for the turbine foundations, the access roads in areas requiring significant cut, transmission line trenches, and above-ground transmission line poles. However, no blasting is proposed for the road between turbines #6 and #7, or for those turbines. Blasted rock or boulders would be broken up and used for deeper fills, crushed for topping gravel, crushed for use as surface gravel for access roads, and/or processed and used as rip rap. Because the Commission's Land Use Districts and Standards only provide a small amount of blasting guidance, the blasting report was written to also meet the MDEP requirements.

Construction schedule and decommissioning

43. *Construction schedule*. The petitioner included a projected construction schedule detailing the amount of time needed for each stage of the project, including design and engineering, ordering and transportation of equipment, bids and contracts, upgrades to existing roads, new road construction, turbine installation, transmission line installation, construction of the maintenance facility, and post-construction testing and commissioning. Once delivered to Maine, it is anticipated that the Vestas V90 nacelles and blades would be carried by train to Waterville, and then would be transported to the site over State highways using customized vehicles. The projected time allotted for all phases of the project is approximately one year. The projected time allotted for the construction phase of the project is 193 days. The petitioner stated that its plans have included having the facility on-line by

December 31, 2007, which is the deadline for obtaining Production Tax Credits (PTC) under the current federal legislation.

44. *Decommissioning*. In its application, the petitioner asserted that, except for Maine Yankee, no other power plant in Maine has been required to provide a decommissioning plan, and there is no State or federal law requiring a wind farm to provide a decommissioning program. The petitioner further asserted that requiring wind farms to provide a decommissioning program may discourage development of the technology, inadvertently encouraging polluting forms of power generation, which would be contrary to the State's energy policy. However, in response to the Commission's concerns about the possibility of abandonment of the wind farm, the petitioner reviewed the long-term economics and operation of the RWF, and the cost of decommissioning to assess the need to develop a decommissioning plan. Several key factors were considered:

A. The petitioner stated that the risk of abandonment of the RWF is low. The V90 turbines would likely be replaced by a newer technology before the end of their 20 to 30 year life period, and wind turbines are fairly easy to replace. Because the highest cost for a wind farm is the capital cost of installation, with low operating costs once the infrastructure is in place, there is a great incentive to continue to operate the facility once it is running. The need for increased power generation by renewables and for diversification will provide continued incentive to operate the facility. Further, the electricity demand in the New England region is reliable.

B. The petitioner also noted that there is an active salvage market for the materials the wind turbines are made of. The salvage value of the turbines provides security against abandonment of the facility. The above ground portions of wind turbines are fairly easy to remove, and all that would remain after removal would be a 12 foot wide gravel road and the foundations.

C. The petitioner further asserted that in the past, federal incentives for windpower development, and the early, undeveloped technology led to some facilities being abandoned. The current tax incentive programs have been changed to reduce the potential for nonviable projects to be developed. Further, the wind farm technology is better developed, producing a more stable industry and reducing the potential for abandonment.

D. Finally, the petitioner noted that a windpower facility does not require handling or disposal of radioactive, hazardous or special wastes; does not block fish passage; does not require large fuel stockpiles that can pollute groundwater; and does not have a dam to remove. Issues associated with the decommissioning of a wind farm are limited primarily to the removal of the towers.

E. In MMP's prefiled testimony, a May 26, 2006 letter from Edison Mission Energy stated that it intends to supply the necessary funds to construct the

project, including decommissioning, if needed (see Finding of Fact #52, Financial Capacity).

Environmental assessment

45. *Wildlife, wetlands, and habitat*. The petitioner contracted Woodlot Alternatives (WA) to conduct the environmental assessment. Surveys of the wetlands and wildlife habitat in the project area were conducted between 1993 and 2006 using field studies, researching literature and State records, and by consulting with State and federal agencies. The project area that was surveyed included the proposed turbine sites, new access roads, and transmission line corridors, both within and outside of the proposed D-PD Subdistrict. The field studies included spring breeding bird and fall migration surveys, raptor migration surveys, bat migration surveys, small mammal trapping, Canada lynx surveys, wetland and stream identification, identification of natural plant communities using the Maine Natural Areas Program (MNAP) classification system (Gawler and Cutko, 2004), and field assessment of amphibian breeding habitat.

A. *Ecological site description.* The project area is located in the Western Mountain Biophysical Region of Maine, which is characterized by cool temperatures and high snowfall. Elevations within the project area range from 2,200 feet at Nash Stream to 4,010 at the summit of Redington Pond Range. In the general vicinity of the project, Sugarloaf, Crocker, Bigelow and Spaulding Mountains are equal to or higher in elevation than Redington and Black Nubble. Low to middle elevation areas have somewhat poorly drained deep coarse loamy soils, while higher elevations soils on the ridgelines are generally well-drained, cold, acidic, and shallow.

Four natural communities that are components of the Spruce-Fir Northern Hardwoods Forest Ecosystem are present in the project area. Above 2,500 feet in elevation, balsam fir stands dominate the landscape, while below 2,500 feet mixed stands of birch, maple, and beech occur. Spruce budworm outbreaks in the 1970s and subsequent timber harvesting have influenced the forests' characteristics and species composition. Active timber harvesting is on-going to the north, west, and east of the project area. To the south, the Navy survival training facility has limited the extent of disturbance. Timber harvesting has occurred up to 3,200 feet in elevation on Black Nubble and up to 3,500 feet on Redington.

The principal waterways within the project area include Nash Stream, Stony Brook, and the South Branch of the Dead River. Two small high elevation ponds and Redington Pond at a lower elevation occur south of Black Nubble on the Navy parcel. Caribou Pond, which outlets to the South Branch of the Carrabassett River, and surrounding wetlands are present on the southeast side of Redington.

B. *Impact assessment.* WA's assessment found that the potential direct impacts to wildlife include habitat loss and fragmentation, loss of areas of Subalpine Fir Forest, and bird mortality. Potential indirect impacts would primarily be due to habitat alteration. The majority of the habitat loss above 2,700 feet in elevation would be for the turbines and new access roads (see Findings of Fact #28 and

#36). Below 2,700 feet in elevation the transmission lines would be in recently clear-cut or frequently harvested areas. Except for the permanent access roads, forested habitat along transmission line corridors would become permanently shrub-dominated, and the wildlife habitat value would be changed, but not eliminated.

WA stated that impacts to habitat would be avoided or minimized where possible by the 20% reduction of the road widths, minimizing the size of turbine pads to the extent possible, locating the turbines away from the most sensitive ridgeline areas and wetlands, maximizing the use of existing roads, locating access road and transmission line routes to avoid wetlands, maximizing maintenance of stream buffers at transmission line crossings, maximizing areas to become revegetated after construction, and using erosion control mix to stabilize disturbed high elevation areas to encourage re-colonization by indigenous species.

C. *Habitat fragmentation.* WA asserted that habitat fragmentation due to continuous timber harvest and land management roads has already occurred in the project area. However, while land management practices change the species composition of local wildlife populations, these areas continue to be used by wildlife.

An area above 2,700 feet in elevation approximately 21,200 acres in size exists within the region where the wind farm is proposed. The area is not entirely forested, but is dominated by various types of subalpine forests, and has been subjected to timber harvesting and other development such as ski resorts. The lower elevation areas surrounding the 21,200 acres has been heavily harvested, and are developed in a variety of ways.

The permanent conversion of 85 acres of high elevation habitat within the 21,200 acres is proposed for the wind farm, which would be approximately 8% of the 1,004 acres of the proposed D-PD Subdistrict. WA asserted that the majority of the species in the proposed D-PD Subdistrict area would adapt to the change of habitat because the size and linear nature of the clearings for the roads and turbines would be relatively small and ecologically would function similarly to blow-down areas.

D. *Rare, threatened and endangered species.*[1] WA stated that although the literature and known records identify seventeen state-listed animals as possibly occurring in the vicinity of the project at both high and low elevations, seven species were found in the project area during the field surveys. The potential for impacts to the species not found, but possibly occurring, was considered by evaluating each species' habitat needs and comparing it to the habitat in the project area.

---

[1] Plant and animal species and natural plant communities are State-listed according to the number of known occurrences:

S1 = Endangered: Critically imperiled in Maine because of extreme rarity (five or fewer occurrences or very few remaining individuals or acres) or because some aspect of its biology makes it especially vulnerable to extirpation from the State of Maine.

S2 = Threatened: Imperiled in Maine because of rarity (6-20 occurrences or few remaining individuals or acres) or because of other factors making it vulnerable to further decline.

S3 = Special Concern: Rare in Maine (on the order of 20-100 occurrences), based on available information, but not sufficiently rare to be considered Threatened or Endangered.

WA's field surveys in the high elevation areas documented one northern bog lemming (S2) on Redington and Bicknell's thrush (S3) on Redington and Black Nubble. The olive-sided flycatcher (S3) was documented once in a regenerating clear-cut area. Cooper's hawk (S3) was observed in the vicinity of the project during migration surveys, but no evidence of this species nesting within the project area was found. Three bats identified in the project area are State-listed as S3 [see section I(2), below, and Finding of Fact #57,A(3)].

E. *Fir-Heart-leaved Birch Subalpine Forest.* WA asserted that the natural plant community Fir-Heart-leaved Birch Subalpine Forest (S3) occurs within the project area in various states of natural and human disturbance, mostly above 2,700 feet elevation, on both Redington Pond Range and Black Nubble Mountain. This community also occurred at lower elevations, but is obscured by timber harvesting. Canopy height at the summits is 25 feet or less, and 40 to 50 feet at lower elevations. This community is listed as rare statewide, but is relatively common in the Western mountains of Maine.

WA asserted that on Black Nubble, this community has been heavily timber harvested (reference Forest Operations Permit FOP 692). The summit of Redington has not been recently harvested, but some portions of the slope have been. Also, several small areas on the ridgelines of both Black Nubble and Redington were cleared over the last decade for the meteorological towers and access trails (reference Development Permit DP 4242). On both mountains, this community has been damaged by budworm infestation, and has been subject to periodic blow downs. One expression of this community are "fir waves', which are present on the upper northeast slope of Redington, to a lesser extent on Black Nubble, and on nearby South Crocker. The fir waves on South Crocker are the more typical representation than on Redington. On the ground, fir waves contain areas that resemble blow downs.

Because of concern for Bicknell's thrush, the Subalpine Fir Forest within the project area was WA's focus for the habitat fragmentation assessment. WA asserted that the areas to be disturbed by the project in the Subalpine Fir Forest would be relatively small compared to the amount of habitat that would remain available at the site (see section H(2), below; and Findings of Fact #36 and #57). WA also noted that Bicknell's thrush breeds in disturbed sites, lessening the potential for impact.

F. *Wetlands and streams.* WA identified and mapped wetlands in the project area, as shown in part in Appendix 3 to Section 1 of the petition. Wetlands in the project area are predominantly forested with small inclusions of scrub shrub wetland, or predominantly scrub shrub wetland along the floodplain of Nash Stream. Forested wetlands create a narrow fringe along some streams at the lower elevations. Along the ridgelines, several small, and one larger isolated, forested wetlands were present. The majority of the streams in the project area were intermittent, feeding the small permanent streams that are tributaries to Nash Stream and Stony Brook.

(1) *Wetland impacts*. In total, approximately 9.5 acres of wetlands would be altered in both the organized and unorganized areas of the project. Of this total, 4.6 acres would be in Carrabassett Valley, with 4.9 acres of wetlands affected in LURC jurisdiction. Wetlands to be impacted were separated into (a) direct impacts, *i.e.* areas to be permanently altered by filling; and (b) indirect impacts, *i.e.* areas where only the tree and upper shrub layers would be removed. Wetlands to be permanently altered would be for stream crossings and widening of the roads. Vegetation clearing (indirect impact) within wetlands along the roads would be to allow transportation of equipment during construction, but these areas would be allowed to revegetate after construction. While clearing within the wetlands in the transmission line corridors would be a permanent alteration, it would not eliminate the wetland as habitat.

The area of wetlands to be filled would be 0.14 acres, and the area of wetlands that would only be cleared would be 4.71 acres. For the existing road upgrades and new roads, the total area of wetland alteration (both direct and indirect impacts) would be 0.27 acres, of which 0.13 acres would only be cleared and 0.14 acres would be filled. For the 34.5 kV transmission lines, 0.91 acres of wetlands would be cleared. For the 115 kV transmission line, 3.67 acres of wetland would be cleared. No wetlands would be impacted for the turbines.

(2) *Avoidance and minimization*. To avoid and minimize the wetland impacts, the petitioner proposed to use existing roads to the extent possible. Existing crossings would be upgraded; where possible, existing roads would be widened only on the non-wetland side of the road; and the widths of the upgraded and new roads would be as narrow as possible. Proposed transmission lines routes were moved several times to avoid wetland impacts, and minor adjustments would be made to avoid wetlands when determining the final pole locations. In accordance with Maine Department of Inland Fisheries and Wildlife (MDIFW) recommendations, stream crossings by transmission lines would be constructed to minimize the area of buffer affected (see Finding of Fact #57). The Nash Stream substation location was moved to minimize wetland impacts due to the access road.

G. *Seepage areas*. Although not meeting the definition of a wetland using the *Army Corps of Engineers' Wetland Delineation Manual* (1987) methodology (which is the standard applied by LURC for on-the-ground identification of wetland boundaries), the sloping portions of the project area are characterized by frequent groundwater seepage areas. Located in a mountainous region with abundant precipitation, significant runoff due to snow melt in the spring, and areas where groundwater emerges to the surface, seepages are important to the hydrology of the project area. Maintaining the existing mountainside hydrology to the extent possible will assure that erosion and sedimentation is minimized, storm water runoff is properly handled, and wetland and stream habitat both in the project area and down-gradient are reasonably protected.

The petitioner's environmental, soils, and road design consultants worked with the State Soil Scientist to identify ways to protect the seepage areas and maintain the hydrology. Additional discussion of seepages is included in Findings of Fact #40 and #58.

H. *Avian monitoring*. Birds in the project area, at both high and low elevations, were surveyed by WA between 1993 and 2003 using breeding bird surveys, spring and fall hawk migration counts, golden eagle surveys, and songbird migration surveys. Due to a lack of habitat in the project area, game bird and waterfowl surveys were not included in the assessment. WA found a total of 62 species using the project area. Radar and other surveys were done to assess the passage rates of migrants through the area, with 47 species likely to migrate over the site. While most of the species breeding in the project vicinity are common in Maine, several occur less frequently and are found in mountainous areas of Western Maine and in northern and eastern Maine, such as spruce grouse, black-backed woodpecker, gray jay, boreal chickadee, Bicknell's thrush, and blackpoll warbler.

(1) *Breeding bird surveys*: Breeding bird surveys were conducted on Redington Pond Range and Black Nubble Mountain in 1994 and 2002 by WA. The 2002 surveys also incorporated the Vermont Institute of Natural Science field protocol to detect Bicknell's thrush. A total of 27 species were found in the ridgeline areas, with fewer species using Black Nubble. The most common species on the ridgelines were blackpoll warbler, Swanson's thrush, Bicknell's thrush, white-throated sparrow, dark-eyed junco, and yellow-rumped warbler.

(2) *Bicknell's thrush.* Bicknell's thrush was documented 18 times on Redington in 1994 and 5 times in 2002 by WA. On Black Nubble, WA documented Bicknells' thrush two times in 2002, although the report was uncertain. This neo-tropical migrant has been identified as being of concern because it is endemic to eastern North America and its population numbers have been declining, in particular due to habitat loss in its wintering areas in the tropics. Bicknells' thrush breeds in stunted spruce-fir forests with frequent blow-down areas. It is most common above 2,400 feet in elevation, but also breeds at lower elevation sites with appropriate habitat, including disturbed sites. WA noted that Bicknell's thrush has used areas previously cleared for the meteorological towers within the project area.

(3) *Hawk migration counts*. Hawk migration counts within the project area and vicinity were conducted in 1993 and 1994 by WA. A total of 10 species were recorded across all sites, most commonly sharp-shinned hawk, red-tailed hawk, American kestrel, and broad-winged hawk. Peregrine falcon was not found during the surveys. Cooper's hawk migrated through the area, but was not found to be breeding. A literature search suggested that regionally, migrating hawks are more abundant in the less mountainous areas to the south than in the project area. The species recorded during the hawk counts are common in Maine.

(4) *Golden eagle surveys*. Field surveys for golden eagles were conducted in 1994 using aerial and ground surveys of potential nest sites by WA in coordination with MDIFW staff. The surveys were also conducted at Black

Nubble, Bigelow, and Old Turk Mountains. No golden eagles were observed by WA during the surveys.

(5) *Songbird migration surveys*. Nocturnal songbird migration was documented by WA using ceilometer and moon-watching surveys (1994), radar surveys (2002 and 2004), and acoustical monitoring (2002) to estimate passage rates over the project area. In 2002 weather radar data were obtained from the National Weather Service station in Gray, Maine to compare migration trends.

(a) *Ceilometer and moon-watching surveys*. WA found that for birds migrating through the general project area, 35% flew below 200 feet, 12% flew between 200 feet and 500 feet, and 53% flew above 500 feet. The number of birds per hour flying over the project area averaged 1.8, compared to an area in Freeport with 10.4.

(b) *Acoustic surveys*. At the request of MDIFW, WA used acoustical monitoring to help identify migrating species. The species identified were expected in the project vicinity, and most are common in Maine. More calls were recorded on the lower slopes than at the summit.

(c) *Radar surveys.* WA found that during migration the majority of birds flew at a lower elevation around the mountains, following the valleys rather than directly over the mountains. During the fall 2002 migration, 4.9% of all "targets" detected by the radar flew toward Black Nubble, and 95.1% did not. For birds migrating at elevations well above the mountains, there would be no change in course as topographic features are encountered. Local topography is known to affect the direction of migrating bird movements.

Passage rates. WA recorded mean passage rates through the project area ranging from 808 to 1,472 targets per hour. The passage rate data were skewed by the number of insect and other non-avian data points that show on the radar as "targets". Methods to adjust the data to account for this were not well developed in 2004 when the surveys were done. Therefore, the passage rate data are not directly comparable to the ceilometer and moon-watching bird survey data on a one-to-one basis.

(6) *Post-construction avian monitoring*. As recommended by MDIFW, the petitioner stated that the details of a post-construction avian monitoring plan would be prepared for the Final Development Plan, in consultation with MDIFW.

(a) An avian habituation study would be conducted to characterize the bird community dynamics before and after construction. Transects for breeding bird point counts would be surveyed during construction, and one, three, and five years after construction. The data would be compared to pre-construction data.

(b) A radar and visual study of bird migration would be conducted on the ridgelines after construction to supplement the pre-construction studies, which placed the radar at a site on the lower slope of the project area to avoid clearing of trees with the P-MA Subdistrict. Passage rates, flight direction, and flight height would be documented, and thermal imaging would be used to assess low-level flights over the ridgelines.

I. *Mammal surveys.* Mammal use of the project area was surveyed by WA between 1994 and 2005 using small mammal trapping, deer yard surveys, incidental observations during other field surveys, and consultation with MDIFW and the U.S. Fish and Wildlife Service (USFWS). WA's field surveys found 19 of the 46 possible species in the project area.

(1) *Small mammals.* WA conducted trapping on Black Nubble and Redington in the high elevation areas, focusing on areas likely to support less common species. Species documented during the surveys included four types of shrews (masked, smoky, pygmy, and northern short-tailed), southern red-backed vole (the majority of all individuals trapped), and northern bog lemming (S2) (one individual).

Northern bog lemming management plan. The petitioner proposed to protect three wetlands on Redington likely to be used by the northern bog lemming, including a 250 foot wide upland buffer, as recommended by WA. The details of the habitat management protocol would be identified in a plan prepared in consultation with MDIFW for the Final Development Plan. WA recommended that at a minimum, the plan would include the use of erosion control mix to encourage regeneration by native plants rather than conservation mix grasses to limit invasion by competing non-native small mammals and exotic non-native plants, and field surveys to search for invasive plants.

(2) *Bats*. Assessed in consultation with MDIFW in 1994 and 2003, WA did not identify bats as an issue of concern for the proposed wind farm due to lack of habitat, lack of known bat hibernation locations, and suspected low bat populations in the area. The potential for bat kills in association with wind farms has only recently been identified as an issue, primarily due to a large bat kill event in West Virginia in 2003 and 2004. Therefore, at the request of MDIFW, acoustic bat monitoring was conducted by WA on Black Nubble during the fall of 2005. WA found three bat species in the project area: little brown bat, hoary bat, and big brown bat, with activity occurring primarily on two nights in September. Species and periods of activity could be determined, but not the numbers of individuals present. Because bats are more common over ponds, wetlands, or other habitats with large numbers of flying insects, the most suitable bat habitat in the project area is the lower elevation transmission line corridors. The ridgelines areas are cold with high winds, have few wetlands, and no streams, and are not optimal bat habitat.

(3) *Large mammals*. WA's surveys found that white-tailed deer, moose, and black bear all occurred frequently in the project area. Deer wintering areas in the vicinity of the project were identified using LURC maps, and field surveys using established MDIFW methodology were conducted within the project area. No deer wintering areas occurred within the project area. Because deer use was limited at the higher elevations, no additional studies of deer use of the project area were conducted.

(4) *Canada lynx*. Canada lynx was federally listed as threatened in 2000, and is State-listed as rare (S3). While its range is north of the project area, Canada

lynx has a very wide range and could potentially occur in the project area. MDIFW had reports between approximately 1991 and 2003 of lynx occurring in the vicinity of the project, and conducted field surveys in Western Maine in 1994 and 1995. MDIFW repeated the survey in 2005 and found no occurrences. Due to the large range of the Canada lynx, the lack of documented occurrences in Western Maine, and relatively small areas of disturbance for the roads and each turbine, the proposed wind farm is not likely to adversely affect Canada lynx.

J. *Bird and bat impacts due to collisions*. The potential for collision by birds and bats with the turbines exists, but the total number of birds and bats likely to be affected by the proposed RWF was determined to be low by WA and by MDIFW (see Finding of Fact #57,A). Although historically there are several records of high bird and bat kills associated with wind farms, the majority of wind farms in the United States have not experienced high collision rates. In the instances where this has occurred, the wind farms were sited in an area with high bird or bat concentrations.

WA noted that the average rate of bird collisions with wind turbines in the United States is 2.3 birds per turbine per year, although at some sites mortality data has been difficult to collect due to the type of habitat the wind farm is located in. Collision by bats with turbines appears to be similar to the number of bird collisions, but recent studies have found up to one bat collision per turbine per day during swarming periods in the breeding season in July and August at some sites. The greatest risk of bat impacts appears to be during migration.

K. *Fish habitat*. WA asserted that fish habitat likely to be affected by the proposed project is within perennial streams, such as Nash Stream and Stony Brook, and their tributaries. All streams observed in the field were assessed for suitability as fish habitat, and MDIFW was consulted to identify any significant fisheries or resources in the project area. WA stated that within the ridgeline and upper slope areas, no fish habitat was present, although the upper reach of Nash Stream is located on the southwest side of Black Nubble. WA stated that the importance of the intermittent streams for fish habitat is primarily to supply clean, cool water to the streams down-slope.

MDIFW noted that Nash Stream is known to support a wild brook trout fishery. WA also noted that Stony Brook and the South Branch of the Carrabassett River, including Caribou Pond, may also support brook trout. WA stated that during a pre-application consultation, MDIFW commented on the wooded buffers needed to protect the integrity of stream habitats, and the transmission line corridor was then re-routed to avoid Nash Stream. The petitioner stated that the proposed project was designed to limit clearing of vegetation within stream buffers and to minimize stream crossings.

L. *Amphibians and reptiles (collectively "herptiles")*. Existing herptile populations in the project area were characterized by WA by surveying likely habitat four times from 1994 to 2002, and by conducting a literature review to determine local

species distributions and habitat requirements. Although the ridgeline areas provided limited opportunity for herptiles due to cold climate and the dominant plant communities, the lower elevations provided more appropriate habitat. WA found that amphibians were the most abundant herptile at all elevations, including three salamander species (northern red-back, northern dusky, and two-lined), three frog species (wood, green, and pickerel), and the American toad. American toad, wood frog, and northern red-back salamander were observed with the ridgeline areas, although habitat for these species was limited. The eastern garter snake was found in the project area at both high and low elevations. No turtles were found by WA within the project area. Any impacts to herptile habitat at lower elevations would be within the access road and transmission line corridors. No vernal pools as defined by MDIFW at the time of the surveys were encountered in the field.

M. *Sound.* WA asserted that the potential for impacts to wildlife due to the sound produced by the turbines would be low because the sound produced is only audible in the areas near the turbines and is not invasive by nature. WA noted that although it is unclear if the constant low sound produced by the turbines would have an effect on wildlife over the long term, observations at other wind farms indicate that local wildlife adjust rapidly.

46. *Visual assessment.* The petitioner contracted Terrance J. DeWan & Associates (TJD&A) to conduct a visual assessment of the proposed RWF. In addition to the Commission's standards in Section 10.25,E,1 on scenic character, TJD&A used Chapter 315 of the MDEP's regulations and the Foundations for Visual Project Analysis (Smardon, Palmer and Felleman, 1986) to select factors for evaluating scenic quality and the visual impact. Testimony presented by the petitioner on its visual assessment is presented in Appendix A, Section #1,B(2). Visual assessment expert witness testimony submitted by the National Park Service (NPS), collectively by the Appalachian Trail Conservancy (ATC) and the Maine Appalachian Trail Club (MATC), and by LURC's expert witness, James F. Palmer, are presented in Appendix A, Sections #2; #3,A and E; and #10.

A. *Methods.* The land area within a fifteen-mile radius around the project was evaluated, beyond which TJD&A determined the turbines would not be readily visible. The elements of the landscape, including waterbodies, scenic and public resources such as the Appalachian Trail (AT), and man-made changes within that radius were identified. Visual information from the locations of each landscape element was gathered, and the view during leaf-off seasons was determined. A three-dimensional digital elevation model of the project and surrounding area was created. How clearly the project would be seen from those locations and how large elements of the project, such as turbines and transmission lines, would appear to a viewer was assessed. Photographs and GPS data were used to generate photo-simulations representing the landscape five to ten years after construction of the wind farm.

B. *Public surveys.* In 1994, Market Decisions, Inc. conducted surveys of local residents and individuals recreating in the area (hikers, hunters, snowmobilers, and skiers) to determine their attitude toward wind energy in Maine and the proposed RWF, using the photo-simulations to assist interviewees in determining their perception of the potential visual impact. Early in the survey design process, input was solicited and received from the MATC, ATC, and NPS. The survey, which presented a smaller wind farm, showed that the majority of respondents felt the wind farm proposed at that time was appropriate.

Hikers on the AT were surveyed in 2003 and 2004 by TJD&A. The petitioner reported that the 2003 and 2004 hiker surveys revealed that the majority of respondents felt the proposed RWF would have a slightly negative visual impact, though the overall effect on their hiking experience was nearly neutral. The petitioner further noted that the responses to the surveys also indicated other visible human activities, such as clear cuts, developed areas, and roads, would have an equal or greater negative impact on the quality of the hiking experience than the proposed windfarm.

C. *Conclusions.* TJD&A concluded that the RWF would not cause an unreasonable interference with existing scenic or aesthetic uses, nor an undue adverse impact on the scenic character of the land within the viewshed of the project. Other than the view from the AT (discussed below), the majority of viewers would see the turbines at distances of 4.5 miles or more, where the RWF would be perceived as co-dominant to subordinate elements of the landscape. Some portions of the RWF would be visible from twelve of the twenty-seven lakes and ponds within the study area, one of which is rated "significant" and two "outstanding" for scenic quality.

The RWF would be visible from the Appalachian Trail for approximately nine percent (9%) of the distance from the point where RWF would first come into view at Myron Avery Peak, to the last point from which it would be viewed on Saddleback Mountain, or for approximately 3 miles of the total 34 mile stretch of the trail. At a distance of less than four miles from the AT, most views would be intermittent or filtered. The majority of the open views from Mt. Abraham and the AT (between Saddleback and Saddleback Jr.) would be at distances of approximately four to six miles.

47. *Sound assessment.* The petitioner stated that the predicted maximum sound levels produced by the operating wind farm at the property boundary lines would average approximately 50 to 55 decibels (measured as dBA), which is less than the maximum allowed under LURC's standards in Section 10.25,F. The petitioner noted that sound from construction-related activities from 7:00 AM to 7:00 PM are exempted from the standards, and that the sound requirement for a D-PD Subdistrict is "as determined by the Commission."

A. The petitioner noted that modern wind turbines have made significant improvements in engineering and design to reduce sound emissions and are

extremely quiet. During construction, sound from machinery would range from 50 to 60 dBA at the property boundaries. In general, construction of the wind farm would take place between 7:00 AM and 7:00 PM. Blasting procedures to be used would minimize sound impacts for any road and foundation blasting (see Finding of Fact #42).

B. The sound produced during construction will be five miles from the nearest residential lot, and mostly inaudible due to distance. Sound from construction will be audible from the AT and the Navy facility, but at very low levels. The maximum sound levels during operation for some active training areas of the Navy facility will range from at 45 to 40 dBA, a soft conversation level.

Depending on wind conditions, sound levels of 35 dBA (inaudible over natural background wind noise) may occur along a very small portion of the AT near South Crocker Peak, which is approximately one mile from the proposed location of turbine #1 on Redington. During construction, occasional sounds may be audible from the AT, particularly sounds from the north access road and from sites for the northernmost turbines on Redington.

Title, right, or interest

48. In February 2006, the petitioner submitted the following evidence of title, right, or interest in the parcels proposed for development with its petition to rezone and proposed Preliminary Development Plan: The Black Nubble Deed and Exhibits, Black Nubble Expansion Deed, Redington Pond Range Deed and Exhibits, International Paper "IP Road" Option Agreement, Plum Creek Option Agreement, Bureau of Parks and Lands Electrical Right of Way Option Agreement, and Department of Transportation Underground Permit. The parcels to be rezoned on Redington and Black Nubble are owned by Redington Mountain Windpower, LLC (RMW). RMW is an investment company, operationally managed by EEC. The transmission line and access road properties were acquired by various easements. The primary access for the project is the IP Road and other existing logging roads.

The petitioner stated it has no plans to sell the property or to use it for any purpose other than the wind farm. There are no covenants or restrictions in the deeds and easements.

49. On June 2, 2006, the petitioner submitted additional information documenting its title, right, or interest in the parcels proposed for development.

A. To clarify that Maine Mountain Power is the petitioner, which was questioned by Intervenors Appalachian Trail Conservancy and Maine Appalachian Trail Club (ATC/MATC), three documents transferring the development rights from RMW to Maine Mountain Power (MMP) were submitted: Assignment of Development Rights, Assignment of Project Rights, and a redacted Ground Lease and Wind Easement.

B. Documentation of the name change from Kibby Mountain Windpower to RMW was submitted to clarify that there is a valid lease between MMP and RMW.

C. Clarification that the underground portion of the proposed 115 kV transmission line would begin approximately 600 feet west of Route 27 on the Bureau of Parks and Lands' (BPL) parcel was submitted. BPL owns the land north of the AT corridor on both sides of Route 27.

D. The proposed 115 kV transmission line would not be located in Coplin Plantation, although it appears this way on the Base Map (Figure 1) of the petition. Surveyors in the field found that the blazed township boundary lines were not as depicted in the GIS layer used for the map.

50. During the public hearing, the petitioner testified it had executed a fully paid option for a 15 acre parcel on Redington Pond Range from abutter Dallas Company. The parcel is adjacent to the area of the project containing the northern bog lemming forested wetland habitat (between proposed turbines #6 and #7), and would allow the ridgeline road to be constructed completely outside of the 250 foot upland buffer.

Financial capacity and estimated development costs

51. For evidence of financial capacity, in February 2006 the petitioner submitted a letter dated January 20, 2006 from Edison Mission Energy (EME) explaining its relationship to the petitioner as the funding source for the proposed RWF. The letter stated that Maine Mountain Power (MMP) is a joint development company between Endless Energy Corporation (EEC) and Mission Wind Maine (MWM), which is a subsidiary of EME. MMP was formed to develop, finance, build, own, and operate the proposed RWF. EME is funding the project through its subsidiaries under the joint agreement with EEC. After the permits are issued, EME subsidiaries would fund and manage the construction and completion of the project through MMP.

EME and MWM are members of Edison International (EI), which has approximately $33.3 billion in total assets, generated $916 million of net income during 2004, and owns electric power generation assets totaling almost 14,000 MW of capacity. One of EI's principal operating subsidiaries is Edison Mission Group (EMG), an electric power generator, and an investor in infrastructure fossil and renewable energy projects with assets totaling more than $10.4 billion. One of EMG's two primary subsidiaries is EME, one of the nation's foremost owners and operators of independent power generating facilities, with $6.9 billion in assets, and almost 9,000 MW of generation capacity in the United States.

52. On June 2, 2006, in its Responses to Agency Review Comments, the petitioner submitted additional information documenting financial capacity.

A. A May 26, 2006 conditional Letter of Intent to Fund from Randy Mann of EME; the 2005 Annual Report showing EME assets of $6.8 billion as of December 31, 2005; EME's fiscal year form 10-K; and the 2005 Annual Report of the parent company, EI, with assets of $34 billion as of December 31, 2005.

B. In response to a staff question about the importance of Production Tax Credits (PTC) for the proposed wind farm and the need to have the project on-line by December 31, 2007 when the current PTC runs out, the petitioner responded that the PTC is as important to the viability of the proposed RWF as it is to all U.S. windpower projects. In addition, EME stated it has already ordered the Vestas V90 turbines for this project in anticipation of the wind farm being on-line before the deadline.

C. The portion of the proposed 115 kV transmission line to be run underground along the Route 27 right-of-way would be paid for by the petitioner. The cost of the transmission upgrades identified in the SIS, which was estimated to be $3.2 million, would also be paid for by the petitioner (see Finding of Fact #17,B(1)).

D. On March 17, 2006, the petitioner signed a Power Purchase Agreement with Constellation New Energy, Inc. Constellation would purchase the power generated by the RWF and the Renewable Energy Credits (REC) at fixed prices for the first 10 years, and is expected to sell the energy at fixed price over that period on a retail basis to medium and large businesses, and other customers, giving priority to customers in the project area and Maine. Constellation has already initiated marketing the electricity to Maine customers. Constellation is a leading retail provider of electricity in Maine, New England, and North America, and is a subsidiary of Constellation Energy (2005 revenues of $17.1 billion).

53. *Estimated development costs*. The total project costs are estimated to be approximately $130 million, which is approximately $4.3 million per turbine, or $1.4 million per installed megawatt capacity. The development costs for the various components of the project would be:

A. The wind turbines, including transportation: $86.6 million.
B. Installation of the turbines: $7 million.
C. Installation of the foundations: $7 million.
D. Transmission lines: $4 million
E. Access and ridgeline roads: $13 million
F. Electrical system and transformers: $5 million
G. Other/balance of wind farm: $1 million
H. Interconnection: $3 million
I. Development: $1.4 million
J. Soft Costs: $2 million

The development costs and balance of the plant costs include the mitigation measures, underground cable routing, wetlands avoidance, visual impact mitigation, minimizing clearing, pre-permitting and post permitting studies, site stabilization and erosion control, storm water management, and revegetation measures.

Technical Capacity

54. The petitioner submitted a summary of its key personnel and consultants, and supplied resumes for each to provide evidence of technical capacity. Principal members of the design and planning team included: Terrence J. DeWan & Associates; Woodlot Alternatives, Inc.; DeLuca Hoffman, Inc.; Albert Frick Associates, Inc.; Gagnon Engineering, Inc.; E/PRO Engineering & Environmental Consulting; S.W. Cole, Inc.; Bernstein Shur Sawyer & Nelson; and Vestas Wind Systems. In addition, Edison Mission Operations and Maintenance Services, a member of the Edison Mission Group, has capability and experience in managing and operating wind energy projects, and would provide such services for the RWF.

55. Additional evidence of technical capacity was provided by the petitioner in its June 2, 2006 "*Responses to Agency Review Comments*," and as testimony the public hearing. Testimony was provided by PowerGrid Strategies, LLC; Constellation New Energy, Inc.; Arcadis, Inc.; M.A. Mortenson Company; and Sargent Corporation (see Appendix A, Section 1).

Public Services

56. With regard to the need for services for the development, the petitioner has made provisions to be self-sufficient where possible, or where not possible, to assure that demands put on local services would not be excessive. The maintenance facility would include its own septic system. During construction, sewage would be handled using portable sanitary stations. The construction debris generated by the project would be disposed of by local waste haulers, and the small amount of solid waste generated during the operation of the facility would be disposed of using a local private company, such as Waste Management Co. in Norridgewock.

Fire protection would be provided by the towns of Stratton, Rangeley, and Carrabassett Valley and overseen by the Maine Forest Service. The wind turbines would be equipped with smoke detectors and a detection system that will automatically disconnect the turbines from the electrically grid and alert operators on a 24-hour basis. Prior to construction, the project would be reviewed with the local fire marshals. In addition to the State police and local sheriff's department, private security personnel would patrol construction areas and equipment. After construction, the turbines would be locked and the access roads gated. Access by emergency medical services would be enhanced by the proposed road improvements, by proposed road signs, and by designation of emergency locations for helicopter rescue. Specialized emergency training, such as high angle rescue, would be provided by the petitioner.

Review Comments

State agencies

57. *Maine Department of Inland Fisheries and Wildlife (MDIFW).* The MDIFW provided pre-submission guidance to the petitioner for the wildlife surveys, reviewed the proposal, answered Intervenor questions, and submitted post-hearing comments.

A. *Review and post-hearing comments*.

(1) *Avian monitoring*. The petitioner consulted with MDIFW since 2002 to evaluate the risks to migrating birds, to address such questions as how important the project vicinity is to migrating birds; how many birds fly in the vicinity of the project; and what species are involved. MDIFW determined that the results of the petitioner's surveys strongly suggest there would be no undue adverse impact to birds as a result of the project. No further field studies were requested prior to construction, but an explanation of how the spring bird migration data were analyzed was requested. Any post-construction monitoring protocols and mitigation plans developed for this project should be discussed with MDIFW.

(2) *Bicknell's thrush.* Bicknell's thrush is a disturbance-dependent species living in Maine primarily in high elevation forests, and has been known to use areas such as ski resorts and clear-cuts. Although population numbers have declined across its range in eastern North America, the species is not recommended for State-listing as Threatened or Endangered. MDIFW does not believe the habitat alteration proposed for the wind farm would have a measurable effect on the population of Bicknell's thrush in the area. MDIFW's concern for this species is temporary and related to the timing of construction. MDIFW suggested that ideally, blasting and road building should occur in late summer, after the young have fledged, but this single season concern could be minimized if the forests were cleared before the breeding season. However, the literature suggests that clearing at high elevations appears to not affect occupancy.

(3) *Bats*. At the time the petition was being prepared, large bat kills at wind turbines had not been documented, so bat studies were not recommended by MDIFW. MDIFW has records of eight species of bats likely to be found at the site, rather than the seven reported by the petitioner. The eighth species is the eastern small-footed *myotis,* which is a federally listed Species of Special Concern proposed for Special Concern (S3) status in Maine. This species is known to hibernate 30 miles south of the project area, and there has been one capture north of the site. However, because there is little bat activity in the project vicinity and the rotor swept area would be above the bat activity area, no changes to the development are warranted at this time. MDIFW stated that the petitioner has made a reasonable effort to address the concerns raised by MDIFW about the potential adverse effects of the project on wildlife. However, a post-construction bat monitoring plan

should be developed. MDIFW would like to review any bat strikes after the project is operational.

(4) Maine Audubon Society (*MAS) avian and bat monitoring protocol.* MDIFW staff co-authored, edited, and provided technical and policy guidance for the MAS stakeholder groups' draft pre- and post-construction avian and bat monitoring protocols for evaluating windpower projects (see Appendix A, Section 3). MDIFW notes that while the technical merit of the document has been acknowledged, group consensus is lacking as to its application. In addition, the Redington Wind Farm studies pre-date the MAS protocols by three years, and knowledge gained from the studies done for the RWF contributed to the development of the protocols.

(5) *Northern bog lemming*. MDIFW stated it believes the protection of the northern bog lemming is addressed well by the petitioner by avoiding the habitat. Post-construction monitoring is advised.

(6) *Fisheries*. The primary concern for fisheries is the brook trout fishery in Nash Stream, Stony Brook, Caribou Pond, and the South Branch of the Carrabassett River. MDIFW commented that the erosion and sedimentation control plan is comprehensive, and the impact is expected to be low if the measures proposed by the petitioner are followed. Transmission lines should be located away from streams to minimize floodplain impacts, and should cross streams where they flow though valleys to reduce clearing of the tree canopy in the stream buffer. In addition, stream buffers should exceed the LURC standard of 75 feet.

(7) *Large mammals*. MDIFW stated that the post-construction monitoring is as important as the pre-construction monitoring. There is no impact to lynx expected. Loose wires on-site should be kept stored during and after construction to avoid entanglement by large mammals.

(8) MDIFW requested an explanation of the mechanisms for maintenance, replacement, and removal of the turbines (reference Conclusion #8,E(3) and Condition #13).

B. *Petitioner response*. On June 2, 2006, the petitioner responded to MDIFW review comments:

(1) *Fisheries.* Transmission lines and roads have been relocated away from streams to the extent possible. In-stream work will be coordinated with MDIFW to avoid brook trout spawning periods. Stream buffers will exceed 75 feet.

(2) *Avian monitoring.*

(a) The petitioner and MDIFW staff discussed the constraints associated with establishing radar sites in high mountain areas with no access or cleared areas. Consequently, radar surveys were conducted on slopes but not at the summits, at locations chosen in consultation with MDIFW staff. Surveys were conducted using protocols in use at the time of the surveys, and supported by acoustical and weather radar data, and ceilometer monitoring.

(b) Timber harvesting activities in the project area have affected the Bicknell's thrush habitat. The percentage of existing Bicknell's thrush habitat to be altered within the project area above 2,700 feet in elevation would be less than 1%.

(c) Post-construction avian and bat monitoring for three years at selected turbine sites, nighttime surveillance, and carcass searches are proposed.

(d) Should post-construction monitoring reveal an undue adverse impact, a mitigation plan would be prepared in consultation with MDIFW.

(3) *Bat monitoring.* The Eastern small-footed *myotis* was not included in WA's report in Section 7 of the petition because the RWF project location was thought to be beyond the northern limits of this species range, and also the records reported by MDIFW and USFWS did not include it. This species' habitat needs have been evaluated, and it was determined that the potential for impact is low.

(4) *Vernal pools*. Amphibian breeding habitat was assessed as a part of the habitat field surveys. Several small pools located would be avoided during construction, but no vernal pools as defined by MDIFW were found.

(5) Loose wires would be removed or stored on site.

(6) All turbine equipment and materials brought to the site would be removed if decommissioning occurs.

58. *Maine State Soil Scientist*. The Maine State Soil Scientist provide guidance to the petitioner on erosion and sedimentation control, drainage and storm water management, hydrology, soils, and wetlands. The State Soil Scientist visited the project area on several occasions, reviewed the proposal, answered Intervenor questions, and submitted written comments both before and after the hearing.

A. Review and post-hearing comments. The State Soil Scientist expressed concern for alteration of the hydrology on slopes due to road construction, and for winter road construction.

(1) Road construction on steep slopes in high elevation areas and under frozen conditions will be very difficult and is generally not advised. However, because road construction on steep slopes is necessary to provide access to the site, and road construction under frozen conditions may be necessary to meet the schedule for bringing the project on-line, the State Soil Scientist stated that the soil limitations could be overcome, but would be costly.

(2) The "tool box" approach to the erosion control and storm water management for the road construction was prepared in response to the State Soil Scientist's suggestion. This approach must be applied by the contractor during construction with guidance by a trained, erosion control/storm water professional on-site at all times, will cost more than the standard approach used for road design, but will allow greater control to properly implement the various measures needed to maintain hydrology on slopes and to minimize impacts.

(3) The erosion control and storm water management measures recommended for road construction to minimize impacts to the hydrology were developed by

the State Soil Scientist over a period of more than 10 years for construction of roads in mountainous areas.

(4) Several approaches necessary to address the concerns for construction of the roads were provided:
   (a) For winter road construction: blasted ledge taken from road cuts could be used for the road-bed and rock sandwiches because it is porous and would be stable when thawed; however, excessive cuts should not be made just to provide adequate material. Surface soil layers should be removed before road construction and disposed of off-site or not used in load-bearing areas.
   (b) On slopes, hydrology across the roads should remain intact as much as possible. Use of roadside ditches and culverts should be minimized, and instead use a rock sandwich design[2] to reconnect hydrology where seepages or areas of concentrated groundwater runoff occur, especially in deep cut and fill areas. Additional detail should be provided in the Final Plan for the various types of erosion control and storm water management features such as ditches, rock sandwich, water bars, and slope stabilization.
   (c) If possible, the road surface should be paved in the steeper areas;
   (d) Permanent access roads for the transmission lines should be minimized, and these roads should be prepared over frozen ground or on a bed of wood chips where possible to minimize soil disturbance. When constructing temporary roads, stumps should be left in place where possible.
   (e) In high elevation areas, erosion control mix should be used to stabilize exposed soils, especially in winter. A loam and seed layer does not have to be placed under the erosion control mix. Re-colonization by native species should be encouraged. Conservation mix grasses should not be used because they introduce non-native, low elevation species and can provide a mechanism for invasion of a high elevation site by small mammals that could compete with local fauna. For seeded areas at lower elevations below 2,700 feet, winter rye seeding of disturbed soils should not be done after September 15.
   (f) If it has not already been considered, proximity to groundwater should be evaluated for the final stump disposal locations.
   (g) Adjustments to the design of wood waste berms were suggested.

(5) The State Soil Scientist reviewed the report submitted by Eco-Analysts (EA) for Intervenors ATC and MATC, and stated he believes EA over-estimated the extent of wetlands and streams in the project area. For wetlands, EA only used hydrology (not hydric soils or vegetation) to identify wetland areas. In addition, some of the areas identified as streams were actually drainage ways on steep slopes in highly erodible soils that carry snowmelt and heavy runoff, but do not meet LURC's definition of a stream.

[2] A "rock-sandwich road design" refers to a road constructed in layers that allow ground water to move under the road as sheet flow instead of concentrating the flow in a roadside ditches and culverts.

B. *Petitioner response*. On June 2, 2006, the petitioner responded to the State Soil Scientist's review comments:
   (1) The petitioner stated it has continued to revise its road design to address the State Soil Scientist's concerns regarding seepages and maintaining slope hydrology.
   (2) Regarding the road construction and erosion control plan:
      (a) Ditches with under-drainage are to be used where soil nail or gabion walls are installed on the back-slope, and where recommended by the geotechnical engineer.
      (b) Road surfaces exceeding 10% and switchbacks would be treated with a stabilizer, and steep sections of the road would be constructed using materials that limit erosion.
      (c) Drainage dips and water bars will be used where needed.
      (d) Seeps would be re-connected using flow dispersion berms or pipe culvert outlet aprons.
      (e) Details have been added for the use of rock sandwich, riprap, and erosion control mix.
      (f) Stump disposal areas are proposed in old timber lay-down yards that are flat, dry and have no documented wetland areas.
      (g) Erosion control mix as specified by MDEP will be used in the higher elevation areas, and loam and seed would be used at lower elevations.
      (h) Erosion control berms will be comprised of erosion control mix, as suggested.
      (i) No new borrow pits are proposed. If needed, gravel will be brought in from off-site gravel pits.
      (j) The cut-off date for winter rye seeding was changed to September 15 for elevations above 2,700 feet.
   (3) The petitioner revised its proposal for the sequence of construction of the turbine foundations and the mountain access roads:
      (a) A 12 foot wide temporary road would be constructed to provide access to the mountain tops by construction equipment so that mountain top activities can be started;
      (b) Cut and fill will be minimized along the temporary road to the extent possible adequate to achieve a transversable grade;
      (c) Surplus material removed from the turbine string areas would be used to construct the permanent access road; and
      (d) Erosion control and drainage features will be used for the temporary road.

59. *Maine Department of Environmental Protection (MDEP).* Prior to 2004, MDEP prepared to jointly with LURC review the entire wind farm proposal, and plans were laid to coordinate the submission of the petition and review by both agencies. In 2004, MDEP's statute was changed to allow it to only review the portion of a cross-jurisdictional project located within its jurisdiction, in this case the 3 mile long portion of the 115 kV transmission line located in Carrabassett Valley. MDEP is reviewing this portion of the project under the Site Development Law (reference pending MDEP permit #L -22691-L3-A-N) and under the Natural Resources

Protection Act (NRPA). Eco-Analysts (EA), witness for Intervenors ATC and MATC, submitted a report to MDEP on June 8, 2006 objecting to the ecological work done by the petitioner's consultant, stating among other things that wetlands and streams were under-reported. MDEP reviewed EA's report, and requested the petitioner submit a formal NRPA permit application in addition to the pending Site Permit application. However, MDEP reviewed the entire project in order to provide the following technical review to LURC.

A. An MDEP road engineer provided guidance to the petitioner prior to submittal, and reviewed the proposed road design, offering the following recommendations:
   (1) The field design team should include a wetland scientist familiar with mountain soils and hydrology. The road contractor should have a resident engineer, or other qualified professional, with certification in erosion control.
   (2) Mandatory surface treatments on steep slopes and switchbacks, frequent grading, tight specification for the surface gravel, and broad-based drainage dips should be used.
   (3) Maximum lengths for disturbed areas along the roads should be specified, as an alternative to the proposed construction schedule that MDEP thought would be difficult to enforce.
   (4) Winter construction of roads was not recommended.
   (5) Designs for the Redington access road crossings should be submitted. Bridges should completely span the streams.
   (6) The "Cross Drainage Options" details should be completed, preserving the pattern of existing drainage and seeps, and providing for cross drainage at least every 200 feet.
   (7) Flow dispersion berms and ditch turnout spreaders must be carefully controlled, ditch lengths following flow dispersion should be limited, dispersion berms should only be used with culverts less than 18 inches in diameter, flows should be reconnected, and cross-drainage must be low enough to prevent by-pass by flows. An explanation of when uphill diversions would be used should be provided.
   (8) The erosion control plan should specify how flow estimates should be made to chose stone sizes, how excavated mucks would be disposed of, methods for stump disposal, the use of erosion control mix and stump grindings, and the timeframes for completing ditch and slope stabilization. The amount of erosion control mix needed should be estimated and stockpile locations identified.
   (9) Adjustments to the ridgeline roads were suggested:
      (a) The Redington summit road from station 1774+00 to 1885+00 could be eliminated and a turn-around extended to replace it to eliminate 800 feet of roadway.
      (b) Elimination of turbine #12 would reduce the roadway by 2,600 feet.
      (c) The alternate route to turbines #20 and #21 is preferable.

Petitioner response. Recommendations made by MDEP for the erosion control plan and road design were incorporated into the Preliminary Plan, except that no detail for the Redington access road crossings was provided because no new crossings are proposed. Also, the petitioner believes that a working road segment can be defined by construction time provided a field engineer is on-site. Suggested modifications to the road and turbine layout are being reviewed for consideration in the Final Development Plan. The petitioner continues to work on addressing concerns expressed by MDEP for winter construction.

B. MDEP staff provided guidance to the petitioner prior to submission, and reviewed the petitioner's phosphorus loading evaluation, offering the following comments:
   (1) Phosphorus loading does not appear to be an issue, and buffers will not have to be furthered reviewed as long as development on the steep slopes is kept in the calculations. If long-term road widths are kept to 12 feet, there is enough allocation to meet the standard in the MDEP's phosphorus guidelines without needing to take credit for the buffer treatment.
   (2) The biggest concern is that natural drainage paths are not being mimicked enough. To avoid washouts increasing phosphorus in runoff, the road design should include frequent cross-culverts and/or rock sandwiches.
   (3) Erosion control mix should be used, but because large amounts will be needed, the petitioner should start stockpiling material now. Wood chips and local stump grindings will not work as well.

Petitioner response. The roads will have frequent cross-drainage features, as described in the response to review comments by the State Soil Scientist (see Finding of Fact #58,B). Erosion control mix and stump grindings meeting the MDEP's specifications will be used. Erosion control mix would be prepared on-site using the stumps generated by the project. New England Organics has been contacted to provide additional erosion control mix, if needed.

60. *Maine Public Utilities Commission (PUC).* The PUC submitted the following comments for consideration during the review of the RWF.

A. New, diverse generating sources, such as windpower, in Maine and New England are crucial to reduce the region's dependence on fossil fuel generation, reduce electricity costs and price volatility, and enhance the reliability of the system.

B. In 2000, Maine's electric industry was restructured under Maine's Restructuring Act. Maine public utilities were restricted to provide only transmission and distribution services, and the PUC no longer makes regulatory determinations about the need for new generating facilities. Instead, the need for construction of a new facility is determined by market forces, and the restructured market is regulated by ISO-NE, pursuant to standards developed by FERC.

C. Sixty percent (60%) of the New England electricity market is currently dominated by natural gas or oil fired generation, and natural gas facilities alone set the market price 60% of the time. As a result of several factors, including the increasing costs of natural gas, electricity prices have been rising. The addition of non-gas power sources will drive the price of electricity down by setting a lower daily clearing price, and also by driving down the price of natural gas. The benefit to Maine consumers would be lower electricity prices within the Maine zone, and creating a more secure system.

D. Because windpower is an intermittent source, the availability of the power generated cannot be predicted in advance. Wind power facilities are somewhat less valuable than other types of generators that produce power consistently, and system reliability could be jeopardized if the region's mix included too many windpower facilities. However, the expected amount of new windpower facilities is not likely to be a deterrent, but is more likely to improve system reliability.

E. Transmission congestion is not a serious issue for the RWF. The PUC provided an explanation of the way the energy market works under deregulation.

F. Although Maine is presently a net exporter of energy, the development of diverse generation facilities is crucial to the economic needs of the State. Windpower in general, and this project in particular, will be a benefit to the State's energy future and the reliability of the grid. The RWF would be a substantial step toward meeting the States' goal to increase energy produced by renewables by 10% by 2017.

G. The PTCs and Renewable Energy Credits (REC) apply to other types of renewable energy, not just to windpower. The sale of RECs and PTCs, however, does not detract from the value of new wind facilities, and also serve to help make renewables more financially viable. The PTCs and RECs also do not detract from the benefit of a windpower facility to avoid on a one-to-one basis generation by [primarily] natural gas and oil, and the associated emissions.

61. *Maine Office of Energy Independence and Security (OEIS).* The OEIS reviewed the proposal for the windfarm and commented on the Demonstration of Need, expanding on material the OEIS presented the Commission during windpower information panels held in December of 2005 and April of 2006. Because the Governor does not take a formal position on any project being considered before the Commission, the OEIS provided comments to help the Commission analyze and weigh the on-site environmental and land use impacts with the environmental and energy benefits. Several recent reports were summarized to show that from an energy perspective, the region needs to not only increase energy conservation and lower demand, but also needs to develop new low cost fuels, including wind.

A. In 2001, the New England Governors and Eastern Canadian Premiers signed a historic agreement to reduce greenhouse gas emissions to 1990 levels by 2010, to 10% below 1990 levels by 2020, and over the long term to levels sufficient to avert the threat of climate change, up to 75%. In 2003, Maine enacted climate protection legislation establishing the same goals. In 2004, the MDEP released its Climate Action Plan, setting options to be implemented to meet its statutory goals. The MDEP concluded that if Maine continues business as usual, its emissions would be 34% higher by 2020 than those set by law. Of the options cited by MDEP, reducing emissions by increasing conservation and developing renewable sources figures heavily. The Governor's Energy Bill (L.D. 2041), set a goal to increase the amount of renewable power capacity in Maine by 10% by 2017.

B. The OEIS stated that to assess the relative importance of a project to the State's goal of a 10% increase of energy produced by renewables by 2017, both the installed capacity of the RWF (90 MW) and rated capacity (9 MW to 25 MW) of a project should be considered, and compared to a baseline. Assuming a baseline of 350 MW for installed capacity to achieve the State's goal, the relative importance of the RWF could be established. However, the PUC has not yet finalized the baseline it will use to make the determination as to whether the State's goal has been achieved. It is not possible to quantify the percentage of the State's goal that will be achieved by the RWF, but it would be a significant first step. The OEIS stated it is presently too early to determine how many wind farms will actually be built, or to make a final determination whether all of the wind farms built will be economical.

C. The OEIS commented that transmission congestion is not a serious concern for the RWF. There is a high level of interest in developing various new sources in Maine, and that ISO-NE will need to address transmission constraints as additional generators come on-line, but the RWF alone would not trigger this. Maine needs new non-gas energy to diversify its portfolio, reduce dependence on natural gas, and increase energy security. OEIS stated that windpower is one of the best options for meeting the State's energy policy (Governor's Energy Bill, L.D. 2041), provided several reasons why, and summarized that Maine needs to more aggressively pursue both energy efficiency and renewable energy to achieve State goals. OEIS also stated that the introduction of windpower into the State's system would provide economic benefit.

D. Finally, OEIS noted that while an understanding of PTCs, RECs, and the cap and trade program is useful, the issues are tangential to LURC's rezoning proceeding. However, OEIS offered a summary of each as background information.

62. *Maine Natural Areas Program (MNAP).* The MNAP reviewed the petition and offered the following comments:

A. Because high elevation soils and vegetation are slow to recover, any inadvertent impacts to should be avoided by setting limits for disturbance zones adjacent to construction zones.
B. Where possible, roads and transmission lines should follow existing routes to minimized fragmentation.
C. An erosion control plan for long-term prevention of erosion should be required.
D. Construction debris should be disposed of off-site.
E. Access by unauthorized motor vehicles such as ATVs should be prevented to protect sensitive high mountain areas.
F. A plan to prevent the introduction of invasive plants should be required, including inadvertent introduction by heavy machinery and a monitoring plan for three years after construction.
G. A restoration plan should be required for the site after decommissioning or if the project is not completed, addressing all areas within the Fir-Heart-leaved Birch Subalpine (S3) community that have not been permanently cleared.
H. All materials brought to the site should be removed.
I. A fund should be set up to cover the cost of restoration.

Petitioner response. Impacts to the S3 Subalpine community will be minimized, and roads and transmission lines have been located to follow existing routes to the greatest extent possible. During construction, all debris will be disposed of off site, although where possible wood debris may be chipped on-site for use in the erosion control mix. In the event of decommissioning, MMP is committed to remove all equipment and allow the area to revegetate naturally. Opportunities for invasive plants to become established in the high elevation areas will be minimized by the harsh climate, by regeneration of balsam fir, and the use of erosion control mix to stabilize disturbed areas. In addition, the high elevation sites will be monitored for invasive species for three years.

63. *Maine Bureau of Parks and Lands (BPL)*. The BPL reviewed the Visual Assessment section, noting that there were no photo-simulations showing the view from Bigelow Ridge where there is a clear view of the project area from the Appalachian Trail. However, BPL did not request that additional photo-simulations be submitted.

64. *Maine Historic Preservation Commission (MHPC)*. The MHPC reviewed the petition to continue its required consultation under Section 106 of the National Historic Preservation Act, and concluded that there will be no architectural or archaeological properties adversely affected by the proposed project.

65. *Maine Geologic Survey (MGS)*. The Maine Geologic Survey reviewed the proposal and expressed concern that if black shale were used for road construction, then chemical testing of the road material should be done to assure that storm water runoff is not excessively acidic. Sulfidic mineralization causing excessive acidity is more likely for materials taken from Black Nubble than Redington Pond Range.

MGS also reviewed the water needs for a temporary concrete batch for the foundations and for dust control on roads, concluding that the amount of water needed do not appear to present an issue. MGS suggested a well could be drilled to provide the needed amount of water, or that alternatively local surface water sources should be sufficient (see Finding of Fact #35).

Petitioner response. Because road runoff would be directed to forest buffers, pollution of streams by overly acidic runoff is not expected to be an issue for this project.

Federal agency comments

66. *U.S. Army Corps of Engineers (ACOE)*. After review of materials submitted by the petitioner and Intervenors for the public hearing in respect to the wetlands to be impacted, and a formal screening of the project as a Category Two, Reporting" project, the ACOE stated that it is considering issuing a Programmatic General Permit for the wetland impacts associated with the proposed RWF.

In May of 2006, the ACOE submitted the following preliminary review comments on the proposed RWF:

A. While the ACOE has no authority during the rezoning process, the 0.31 acres of direct wetland impacts would require a permit under Section 404 of the Clean Water Act and requires the Section 106 and Section 7 review. Although the wetland impacts are minimal, other issues under Section 106 of the National Historic Preservation Act, Section 7 of the Endangered Species Act, the National Trails System Act (the AT), and the U.S. Navy facility could play roles in the federal permitting, and could require time consuming studies and possible mitigation.
   (1) It is unclear what role the National Park Service (NPS) has in the review of this project, but it appears ACOE has no regulatory responsibility under the National Trails System Act as compared to its responsibility under the Wild and Scenic Rivers Act. The ACOE will continue to research this.
   (2) Have all the relevant agencies (MHPC and USFWS) and the tribes been contacted?
   (3) A letter will be sent to the U.S. Navy advising them that ACOE is reviewing the project, and requesting comments.

B. While wetland impacts appear to have been minimized and avoided, have all opportunities to reduce the fill of wetlands been addressed? Clearing impacts are not included under ACOE jurisdiction unless there is a direct discharge of fill material to waters of the United States.

Petitioner response. The MHPC (see Finding of Fact #64) and the Native American tribes were contacted about the proposed project. The USFWS has been consulted several times since 1994. The NPS was consulted in 2003 about this project to obtain a right-of way to cross the AT, although the project has since been

re-designed. More recently, NPS filed comments in opposition to the project, and stated it would participate in the public hearing as a government agency. A presentation was given to Navy personnel in 2004, and Navy staff attended the pre-submission meeting in September of 2005. The Navy declined to comment in writing about the project, but stated verbally it would take a neutral position.

67. *U.S. Fish and Wildlife Service (USFWS).* The USFWS declined to submit review comments to LURC staff on the petition to rezone and proposed Preliminary Development Plan due to a temporary lack of personnel. However, in addition to being consulted by the petitioner, the USFWS reviewed the wetland impacts as a part of the Programmatic General Permit review by the ACOE. As indicated in the NPS review comments, USFWS will try to be involved in any future studies, if staffing allows.

68. *U.S. Department of the Navy.* The petitioner gave a presentation on the proposed project to the Navy on December 22, 2004. The petitioner stated that they have had no documented correspondence with the Navy since the 2004 presentation. The petitioner has been in contact with Navy personnel for several years regarding the proposed windfarm, but the Navy declined to make any statement about the proposal. Representatives of the Navy from the Brunswick Naval Air Station, the base responsible for managing the survival school, attended the pre-submission conference on September 8, 2005. LURC staff also discussed the proposed project with the Navy contact person in the spring of 2006, and was told the Navy has declined to comment at this time.

69. *National Park Service (NPS).* Because of NPS' opposition to the RWF and participation in the public hearing, the review comments submitted are combined with its testimony and presented in Appendix A, Section 2.

70. *Federal Aviation and Aeronautics Commission (FAA).* The petitioner worked with the FAA prior to submitting the petition to determine the types of lighting on the turbines that the FAA would require. A summary of the lighting scheme was submitted with the proposed Preliminary Development Plan, and details were provided in the petitioner's June 2, 2006 *Response to Agency Review Comments* (see Finding of Fact #24,D).

Stakeholder review comments

71. Review comments submitted by the Appalachian Trail Conservancy (ATC), the Maine Appalachian Trail Club (MATC), the Maine Audubon Society (MAS), the Appalachian Mountain Club (AMC), the Natural Resources Council of Maine (NRCM), and the Friends of the Western Mountains (FWM) are included with the summaries of each group's public hearing testimony in Appendix A.

72. *Maine Chapter of the Sierra Club (MSC).* The MSC submitted comments in opposition to the proposed RWF, stating that while it believes energy conservation

should be a strong national goal, it supports the development of renewable energy sources only if appropriately sited. MSC asserted that wind farms should be located on agricultural lands, land that has already been substantially disturbed, sites where a credible environmental review concludes that habitat impacts will be acceptable, and sites with strong wind resources without a strong negative outcome. MSC expressed concern that the proposed RWF would require a rezoning of a P-MA Subdistrict. Finally, MSC believes Maine should complete siting studies and adopt guidance for siting wind farms within a comprehensive policy for siting all energy related development.

73. *Maine Appalachian Land Trust (MALT).* MALT expressed opposition to the proposed RWF, commenting that because of the project area's high natural values many organizations have identified it as a high priority for future reserve protection. MALT has been instrumental in the acquisition and protection of surrounding high mountain areas, such as Mount Abraham. MALT believes Redington and Black Nubble Mountains are not appropriate for windpower development, and that the proposed wind farm would have an adverse effect on this remote high mountain region. MALT asserted that the site is poorly chosen by the developer because it is currently zoned P-MA Subdistrict, which are intended to preserve certain mountain areas for their scenic and remote values. MALT asserted that windpower and other industrial development should not be permitted on remote and undeveloped mountains. Finally, MALT stated it believes Maine should undertake a general assessment of windpower development siting, similar to the assessment done for hydropower development, which resulted in the Maine Rivers Act.

74. *Friends of the Boundary Mountains (FBM).* The FBM submitted comments in opposition to the proposed RWF, stating that the mountains should continue to be protected from development for their traditional uses of recreation and forestry.

Public comment

75. *Support*. A total of 215 letters were received in support of the proposed RWF. Of these, 139 letters were received before the public hearing and 76 were submitted after the hearing. Letters in support were received from three legislators, many businesses (including several local businesses) and professionals, and members of several organizations.[3] The President of the Sugarloaf ski resort, the Franklin Journal, a selectman from the Town of Avon, a selectman from Carrabassett Valley, and the Seacoast Management Co. expressed support. The majority of letters voicing support were sent by Maine residents. One letter from the Portsmouth Naval Shipyard included a petition with 40 signatures. During the public hearing, 46 individuals testified in support of the project, including an ex-Governor of

[3] Non-Intervenor organizations supporting the RWF included: The Maine Lung Association, Maine Energy Education Program; New England Environmental Finance Center; Green Campus Consortium of Maine; Democracy Maine; Hydrogen Energy Center; Chewonki Renewable Hydrogen Project; Maine People's Alliance; Greater Franklin Development Corporation; Maine Electric Consumers Coalition; Physicians for Social Responsibility; Environment Maine

Maine. Some members of Intervenors MAS (including a former Executive Director), ATC, and AMC; and members of various other AT groups, The Nature Conservancy, and Intervenor NRCM independently sent letters of support. The issues discussed in support are summarized as follows:

A. The benefits of the project outweigh the environmental impacts;
B. The visual effect on hikers using the AT will not be detrimental, and/or the view of the wind farm will be desirable because of what it represents (from those who hike the AT as well as local residents);
C. The environmental impacts due to construction of the project would not be excessive;
D. The impacts will not be as large as those caused by ski resorts;
E. The RWF is an important step toward development of alternative energy and energy independence and sustainability in Maine;
F. Development of windpower is an important step toward decreasing global warming and the associated environmental impacts to Maine's natural resources that it is causing;
G. Maine should be a leader in developing renewable energy;
H. Wind power is an inexhaustible clean source of energy;
I. The coal industry is aggressively developing new generating plants, which will increase air pollution;
J. Wind farms should be developed as a heritage for our children; and
K. Global warming is a serious concern that must be aggressively addressed.

76. *Opposition*. A total of 170 letters were received in opposition to the proposed RWF. Of these, 85 letters were received before the public hearing and 85 were received after the hearing. One letter was from a legislator, approximately 30 were from individuals associated with Intervenor FWM, three were from members of organizations[4]; and three were from businesses. One letter included a petition with 12 signatures. Members of Intervenors MAS, ATC, AMC, and MATC independently sent letters of opposition. During the public hearing, 58 individuals testified in opposition to the project, of which 11 were those representing FWM when Intervenor status was awarded (see Finding of Fact #80). The issues raised in opposition are summarized as follows:

A. Visual impact to the general area;
B. Visual impact to the AT and degradation of the AT "wilderness experience";
C. Impacts to mountain natural resources, including Bicknell's thrush;
D. Permanent alteration in a high mountain area;
E. Potential costs to the taxpayer for decommissioning;
F. Possibility of adverse impacts to the local economy;
G. Possible adverse impact to recreational uses of the area;
H. Change of the character of the area from pristine to developed;
I. The Western Maine mountains should remain mostly undeveloped;

[4] Non-Intervenor organizations in opposition to the RWF included: Rangeley Chamber of Commerce, Western Maine Audubon Society, Mooselookmeguntic Improvement Association

J. Wind farms should be sited in areas with low resource values, such as agricultural fields;
K. The actual output from the wind farm would be less than the claimed output of 90 MW;
L. High elevation conditions will cause too much down-time for the wind farm for it to be viable;
M. The environmental costs of the project will outweigh the benefits;
N. There will be no significant reduction to air pollution overall;
O. Energy conservation and other alternative energy sources such as solar power are preferred over development of new generation facilities;
P. A wind farm is not compatible with forestry; and
Q. P-MA Subdistricts should not be rezoned.

77. *ATC letter*. Intervenor ATC prepared and made available on-line a letter for its membership to sign and electronically submit to LURC in opposition to the RWF. Fifty-three such letters were submitted from ATC members living primarily in the United States. Of these letters, four were submitted by Maine residents.

Public Hearing

78. The Commission approved the staff recommendation to hold a public hearing at its regular business meeting on March 6, 2006. The date for the hearing was set during the Commission's May meeting.

79. An independent party was contracted by LURC staff for review of the Visual Assessment section of the petition. The contractor reviewed the visual assessment, submitted a report as pre-filed testimony, and participated in the public hearing as an expert witness. The testimony submitted is presented in Appendix A, Section 10.

80. At its May 2006 business meeting, the Commission granted Intervenor status to 15 stakeholder groups and recognized the participation of one federal agency, the National Park Service (NPS). Intervenor status was granted to the Appalachian Trail Conservancy (ATC), the Maine Appalachian Trail Club (MATC), the Maine Audubon Society (MAS), the Appalachian Mountain Club (AMC), the Natural Resources Council of Maine (NRCM), the Conservation Law Foundation (CLF), the Friends of the Western Mountains (FWM), Central Maine Power (CMP), TransCanada, the Independent Energy Producers of Maine (IEPM), the Maine Energy Investment Corporation (MEIC), Ed Holt & Associates, the Coalition for Reducing Dependence on Foreign Oil, Maine Interfaith Power and Light (MIPL), and the Western Mountains Foundation (WMF). Of the 15 groups granted Intervenor status, six declared opposition, six declared support, and three remained neutral. The NPS also opposed the project.

81. A pre-hearing conference for the petitioner and the Intervenors was held on June 8, 2006, and a Memorandum and Order issued by the Presiding Officer on June 23,

2006. Intervenors ATC, MATC, AMC, and MAS were consolidated as a group for the purpose of conducting the public hearing. Intervenors IEPM, MEIC, Ed Holt & Associates, The Coalition for Reducing Dependence on Foreign Oil, and MIPL were consolidated to form a group.

82. Three rulings by the Commission's Presiding Officer regarding the content of the testimony were issued.

A. TransCanada requested an Evidentiary Ruling on July 6, 2006, asking the Presiding Officer to rule that testimony relating to the absence or presence of transmission congestion be excluded as not relevant to the demonstrated need criteria for rezoning. The petitioner, and Intervenors ATC/MATC, IEPM, and FWM objected to TransCanada's request. On July 13th, the Presiding Officer ruled that "consideration of issues surrounding transmission congestion is not irrelevant, but speculation about possible future conditions and circumstances of other windpower projects and implications for the future condition of New England's power grid under various speculative scenarios are not relevant to the Commission's decision on Zoning Petition ZP 702."

B. On July 26, 2006, the Presiding Officer further ruled that "any testimony or evidence submitted to the Commission that is inconsistent with this ruling [of July 13, 2006] will be deemed irrelevant and will not be considered by the Commission in its decision." The second ruling was issued in response to the petitioner's objection to TransCanada's submittal of pre-filed testimony containing statements that were not consistent with the first ruling.

C. On August 10, 2006, after the public hearing, Intervenor MAS objected to LURC staff's request for post-hearing comments from MDIFW, the State Soil Scientist, the OEIS, and the PUC. On August 16, the Presiding Officer ruled that LURC staff may seek assistance from other state agencies at any time during the evaluation of an application. The Presiding Officer noted that MAS had been aware of the post-hearing comment period since the Pre-hearing Conference on June 8, and that MAS had not objected to the procedures at the time. Finally, the Presiding Officer stated that LURC staff's request for comments from the above-mentioned state agencies was done appropriately and fairly.

83. The petitioner, the Intervenors, NPS, and LURC's expert witness submitted pre-filed testimony on June 14 and 25, 2006. Central Maine Power withdrew its Intervenor status on July 21, 2006. The Coalition to Reduce Dependence on Foreign Oil declined to submit testimony. The petitioner, the Intervenors, NPS, and LURC's expert witness presented summaries of their pre-filed testimony at the public hearing. After the hearing, written comments and rebuttal were submitted by the petitioner, several Intervenors, LURC's expert witness, and several State agencies. Because of the quantity of testimony, summaries are presented in Appendix A of this document, and are incorporated herein by reference.

Issues discussed at the public hearing by members of the public are included in the summaries of public comments above, in Findings of Fact #75 and #76.

84. The public hearing record closed on August 21, 2006.

85. All Public Hearing Exhibits are incorporated herein by reference, including the Administrative History presented by LURC staff in Public Hearing Exhibit #9.

86. The relevant sections of the Commission's Comprehensive Land Use Plan, and relevant review criteria of the Commission's statute and Land Use Districts and Standards are attached as Appendix B, and are incorporated herein by reference.

87. The proposed "Land Uses Allowed Within the Redington Mountain Wind Farm D-PD Subdistrict" is attached as Appendix C, and is incorporated herein by reference.

88. The facts are otherwise as represented in Zoning Petition ZP 702 and supporting documents.

Conclusions

Based on the above Findings, the Commission concludes that:

1. The proposed change of subdistrict from (P-MA) Mountain Area Subdistrict and (PSG) Soils and Geology Subdistrict to (D-PD) Planned Development Subdistrict is consistent with the standards for district boundaries, the Commission's Comprehensive Land Use Plan, and the purpose, intent, and provisions of Title 12, M.R.S.A., Chapter 206-A.

2. *Consistency with the standards for district boundaries.* In accordance with Section 685-A(8-A) of the Commission's statute, the criteria for amending a land use district boundary, the proposed D-PD Subdistrict is consistent with the Commission's standards for district boundaries. In the description of the subdistrict [Section 10.21,G,2,b of the Commission's Land Use Districts and Standards], provision is made for windpower facilities to allow that such development to be located in a D-PD Subdistrict. Furthermore, the Comprehensive Land Use Plan (p. 58 to 59), states that "windpower sites are most appropriately zoned to the Planned Development (D-PD) Subdistrict".

   In regard to the 3.5 acres of P-SG Subdistrict on Black Nubble imbedded within the P-MA Subdistrict to be rezoned, no development would occur within these areas because of the steep slope. The areas are small, are at the edge of a P-SG Subdistrct located mostly outside the parcel to be rezoned, and would only be included in the D-PD Subdistrict because they fall within the petitioner's parcels.

3. *Consistency with the Comprehensive Land Use Plan (CLUP).* The proposed rezoning for the Redington Wind Farm (RWF) is consistent with the CLUP.

A. *Principal values and broad goals.* The proposed RWF is consistent with the Commission's broad goals (CLUP, p. 134), and would not substantially degrade the jurisdiction's principal values (CLUP, p. 114).

(1) *Broad goals*: The potential for protection of the jurisdiction's natural resources by the development of clean energy sources is recognized in the CLUP (pp. 23-26). The proposed RWF would be a significant step toward the State's energy policy, which is designed to help protect the State's natural resources. The proposed RWF would be consistent with the Commission's broad goal to "ensure the continued availability of the outstanding quality of water, air, forest, wildlife and other natural resource values of the jurisdiction (CLUP, p. 134)".

The proposed RWF would also be consistent with the Commission's broad goal of multiple use (CLUP, p. 134). The record shows that while some users of the AT have expressed a negative reaction to the wind farm, others have expressed a positive reaction. Construction of the RWF would not cause the AT to become unavailable as a primitive hiking trail, the (P-RR) Recreation Protection Subdistrict protecting the trail would not be violated, and other recreational uses of the area would continue or be enhanced. Access to the parcels to be rezoned for both forestry and recreational uses of the area within and surrounding the project would continue.

Likewise, the project would be consistent with the Commission's broad goal to "conserve, protect and enhance the natural resources of the jurisdiction, primarily for fiber and food production, non-intensive outdoor recreation, and fisheries and wildlife habitat (CLUP, p. 134)". As noted above, the adverse effects of air pollution generated by the burning of fossil fuels on forests, lakes, streams, and the natural environment in general has been acknowledged. In addition, after construction of the wind farm, approximately 90% of the land area involved in the proposed D-PD Subdistrict could continue to be managed for forestry and/or recreation. Last, the petitioner proposed adequate mechanisms to protect fish habitat and has proposed to prepare post-construction monitoring plans in consultation with MDIFW for the wildlife habitat likely to be affected.

Finally, the project would be consistent with the Commission's broad goal to "maintain the natural character of certain areas within the jurisdiction having significant natural values and primitive recreation opportunities (CLUP, p. 134)". Within the project area, the petitioner identified the northern bog lemming wetland habitat as an area of significant natural values, and designed the project to protect this area from alteration. The petitioner has also planned the project so that, after construction, approximately one-third of the disturbed area above 2,700 feet in elevation would be allowed to revegetate to minimize the long-term impacts to the high mountain areas.

(2) *Principle values*: The proposed RWF would be consistent with the Commission's intent to guide new development in ways that will help protect

the jurisdiction's four principle values (CLUP, p. 114). The CLUP (p. 131) acknowledges the siting of windfarms in high mountain areas, and their potential for adverse impacts, as follows: "In the mid-1990's, there has been considerable interest in the jurisdiction as a location for wind-generated electricity. While the Commission recognizes that windpower projects must be located where the wind resource exists, they have potentially sigificant on-site impacts due to their high elevation location and equally significant potential to adversely affect the jurisdiction's principle values." This potential underscores the need for careful review of proposed windfarms in such areas to assure consistency with the CLUP.

(a) The economic value of the jurisdiction's lands for fiber production is identified in the CLUP (p.114) as one of the principle values. The proposed RWF would not substantially interfere with the value of the land affected for forest management practices.

(b) The jurisdiction's principle value of the "availability of diverse and abundant recreational opportunities, particularly for primitive pursuits (CLUP, p. 114)" would not be altered. Although the hiking experience of some users of the AT would be adversely affected, the opportunity to use the AT would not be altered, and the land within the project area would continue to be available for recreational use. Conversely, the opportunity to experience a windfarm in the setting of a high mountain area would become available, and many members of the public have expressed a positive reaction to this opportunity.

(c) In respect to the jurisdiction's high value natural resources (CLUP, p. 114), the petitioner identified these resources within the project area or affected by the project, and proposed protection and mitigation where possible. Given the size and scale of the proposed RWF and its turbines, the petitioner has made reasonable adjustments to the design and layout of the turbines, roads, and transmission lines to mitigate the visual impact. The petitioner's environmental studies, proposed protection and mitigation, and proposed post-construction monitoring led to the subsequent evaluations by the Commission, and state and federal (with the exception of the National Park Service) agency reviewers, that the ecological values of the project area would not sustain an undue adverse impact by the construction of the proposed RWF. [Note: Mountain resources are discussed in Conclusion #3,B(3), below.]

(d) Finally, the CLUP identifies "natural character values, including the uniqueness of a vast forested area that is largely undeveloped and remote from population centers (p. 114)" as a principle value of the jurisdiction. While the proposed RWF would be located in an area that provides a "wilderness experience for some users of the AT because existing development is not visible from the trail, and has high natural values, the location is also near the fringe of the jurisdiction and developed areas. The CLUP recognizes that some areas near the fringe of the jurisdiction area may have "significant natural resource

and recreational values, and face development pressures (p. 114)". On pages 121 to 122, the CLUP states: "The most effective way to preserve the values of an area is to promote compact development patterns, and the Commission has been at least partially successful in this objective. While the Commission has struggled with the issue of appropriateness of location for some large-scale projects, particularly planned developments in more remote areas and other developments where the adjacency principle cannot be clearly applied, the overall focus on location is a strength which warrants further refinement." The proposed RWF, which must be located where the wind resource is and near existing infrastructure for the project to be viable, would also be located near other developed areas, and in this way is consistent with the Commission's approach to protecting the jurisdiction's principle values.

B. *Natural resources goals and policies.*

(1) *Air resources.* The record shows that the proposed RWF would be consistent with the goal and policies of the CLUP for protecting air resources because it would be a clean source of power and would help the State work toward its programs and initiatives to reduce air pollution. The CLUP shows foresight by recognizing the importance of protecting air resources, and sets a policy that the Commission "encourage state, federal and international initiatives directed at reducing emissions of air pollutants." (CLUP, p. 135)

The CLUP (pp. 23-26) recognizes the relationship between protecting the jurisdiction's air resources and activities in the rest of the region, as well as the importance of protecting air resources for maintaining the health of the human and natural environments. Air pollution and its adverse impacts on the jurisdiction are discussed, recognizing that while the Commission can only regulate activities within its boundaries, when considering air resources it must view the jurisdiction in the context of the larger northeast region, and beyond. The interplay between the jurisdiction's human and natural resources and the sources of pollution produced elsewhere, in particular by fossil fuel power plants, is identified. The CLUP extends its consideration of air resource issues to include Maine, New England, and the nation.

Finally, the CLUP (p. 25) recognizes the Commission's broad authority in regulating air quality, deriving from the statutory criteria to "(1) approve no application unless adequate technical and financial provision has been made for complying with the requirements of the state's air and water pollution control and other environmental laws', and (2) that 'adequate provision has been made…. to assure there will be no undue adverse effect on ….' natural resources." The CLUP's recognition of the Commission's authority to consider air quality, the effects of air pollution on natural resources, and current state legislation controlling CO_2 all underscore the importance of viewing the potential benefits for air quality represented by the proposed RWF as a clean energy source.

(2) *Energy resources.* The CLUP (p. 40) discusses windpower as an indigenous energy resource in the jurisdiction, in particular on mountaintops and ridges. The energy resources goal and policies clearly instruct the Commission to encourage the development of indigenous energy resources in the jurisdiction "where there are not overriding, conflicting public values which require protection." (CLUP, p. 136) The benefits of the proposed RWF outweigh the adverse impacts that cannot be further mitigated, for example, adverse effects on the view from the AT and from some other viewpoints. The same view that is adverse to some is a positive experience for others. Visual impacts that can be mitigated would be, such as limiting the number and type of lights on the turbines, the color of the turbines, the placement of above-ground transmission lines behind a ridge to minimize the view from the AT, the use of erosion control mix to visually blend with the surrounding landscape, and the post-construction restoration of the roads to a 12 foot width. The effects of the proposed RWF on natural resources are discussed more extensively below in Conclusion #5.

A second energy resources policy in the CLUP (p. 136) directs the Commission to support the State's energy policies by encouraging "energy conservation and diversification and the use of indigenous renewable resources to increase the state's energy self-sufficiency". The CLUP also encourages the development of indigenous energy resources: "Permit new energy developments where their need to the people of Maine has been demonstrated and they are sited, constructed and landscaped to minimize intrusion of natural and human resources." (CLUP, p. 136) The proposed RWF is consistent with State policy, as was testified to by the OEIS and the PUC (see Findings of Fact #60 and #61). The RWF would be the development of an indigenous energy source, and the public need, benefit, and support have been demonstrated by the petitioner.

(3) *Mountain resources.* The CLUP discusses windpower development within the context of mountain resources (pp. 58-59, p. 131). Windpower is anticipated to be in the mountainous areas of the jurisdiction, and supported if it can be shown on balance to be compatible with the other existing uses and resources in the area. Four primary issues for siting windpower facilities are identified, including visual, soils and wildlife impacts, and technical feasibility. The mountain resources policies in the CLUP (pp. 137-138) reflect this, stating that high mountain areas must be protected from undue adverse impacts by preserving "the natural equilibrium of the vegetation, geology, slope, soil, and climate to reduce the danger to public health and safety posed by unstable mountain areas", and by preserving "scenic values, vegetative communities, and low-impact recreational opportunities".

The petitioner's environmental studies, as discussed in detail below in Conclusion #5, show that the potential for wildlife impacts has been adequately addressed. Plans have been proposed to properly manage soils and related hydrologic conditions within the project area. The petitioner's visual assessment, and the subsequent testimony surrounding scenic impact, have addressed all possible aspects of the visibility of a wind farm sited in a high

elevation area. Scenic resources are further discussed in the next section. Last, concerns for the technical feasiblity of windpower have been addressed over the last decade. Windpower is now a technology that is widespread and has been used in harsh northern climates elsewhere in the world, and turbines have been designed for those conditions.

(4) *Scenic resources.* The Commission's policies for protection and conservation of natural resources, including scenic resources, must be taken in the context of balancing development with conservation (CLUP, p. 1). The record shows that although it would be located in a location on ridgelines that are prominently visible from the AT, the proposed RWF would have a low to moderate overall visual effect on the general area in which it would be located because it would often be shielded from view by forests or mountains, and would be 4.5 or more miles away (*i.e.* technically in the background) from most public viewpoints other than the AT. (Note: The effects on scenic character are also discussed in respect to the Commission's statutory criteria of "no undue adverse effect", and its Land Use Districts and Standards in Conclusion #5,A.)

Because of the proximity of the project area to the AT, much public hearing testimony focused on the view of the proposed RWF from the AT. Although the AT is a unit of the National Park System, it is not given specific status in the CLUP, and is mentioned in the context of being one of many important recreation resources in the State (CLUP, p. 61). The (P-RR) Recreation Protection Subdistrict, which is the zone that is assigned to various recreation resources in the jurisdiction, extends 250 feet on either side of the AT, for a total corridor width of 500 feet. In its testimony, NPS quoted the 1973 Maine Trails System Act, which discusses the primitive character and importance of maintaining Maine's trails and providing for buffering along the trails. The P-RR Subdistrict was designated to provide this buffering.

The record shows that the opposition to the proposed RWF expressed by the NPS was primarily based on its proximity to and visibility from the AT, in particular where the trail is approximately one mile to four miles from the RWF. NPS testified that it has supported all other wind farms near the AT, in part because they would be more than four miles away. Where the RWF would be one mile from the AT, an open view of the facility would not be possible directly from the trail. Two other open views less than four miles away would be a short distance along the trail. The only other views less than four miles away would be filtered or intermittent. Most of the open views of the RWF from the AT would be from several locations along the approximately four mile long section of the AT between Saddleback Mountain and Saddleback Jr., and again from a side trail on Mt. Abraham, four or more miles from the AT. While the visual impact of the wind farm is inescapable because of the size of the turbines and the scale of the facility, the distance from the AT where most of the open views occur is consistent with the distance of other wind farms that were not opposed by NPS.

The concerns raised by NPS, ATC, and MATC regarding the visual impact on the hikers using the AT, although valid for the hikers expressing

opposition and the public groups managing the AT, must also be considered in respect to the overriding public benefits of the proposed development, and the support expressed by other hikers, recreationalists, and the general public state-wide.

(5) *Wildlife and fisheries resources.* A wildlife policy in the CLUP states: "Protect wildlife habitat in a fashion which is balanced and reasonably considers the management needs and economic constraints of landowners (p. 139)." The petitioner evaluated the wildlife habitat in the project area to assure the level of impact would be acceptable, and has proposed post-construction monitoring to assure any impacts that occur are not undue.

Based on the record, in the project area the proposed alterations to the landscape due to clearing for the transmission line corridors and roads would not result in an undue adverse impact to wildlife. Chapter 3 of the CLUP (p. 93) discusses of alterations to wildlife habitat, stating "the Commission believes evidence is lacking showing a link between timber harvesting and an overall decline in the jurisdiction's wildlife resources." Like forest management, clearing of the tree layer for transmission line corridors would alter the landscape, but not remove it from use as wildlife habitat, especially where the areas have already been heavily harvested. Use by edge species would increase, shifting population dynamics, but the shift would be less pronounced in recently or heavily harvested areas. Likewise, road construction for the proposed RWF would not result in a significant change in the use of the area by wildlife, and any effect would be similar to effects associated with land management roads (see Conclusion #5,B(8)). In the high elevation areas, the primary wildlife impacts were identified as potential habitat changes for Bicknell's thrush and the northern bog lemming, and potential bird and bat collisions, all of which are discussed in Conclusion #5,B.

C. *Development goals and policies.* The goals and policies in the CLUP (pp. 140-142) for development in the jurisdiction reflect achieving a balance between development and protection of the jurisdiction's principal values. Key aspects of this balance are to encourage development to locate near the fringe of the jurisdiction, ensure compatibility of uses, and allow for a reasonable range of development opportunities.

In the case of a D-PD Subdistrict, the CLUP (p. 141) provides that development may be located where a resource is, and that such development should be subject to site review. The D-PD Subdistrict, which was established for projects that are dependent on a site with a particular feature or resource that may or may not be near existing development or the fringe of the jurisdiction, is the appropriate zone for most windpower facilities. Given the need of a windpower facility to be located where the wind resource is, the quality of the other natural resources at a site could vary. This is the circumstance that the D-PD Subdistrict rules were designed to address. In the case of the RWF, the site has the wind resource, is located near the fringe of the jurisdiction, but has various natural resources requiring evaluation and protection. The evaluations by the petitioner

and the resource agencies showed that the potential for undue adverse impact, especially for the long-term, is low for most of the resources in the area, and any impacts to these resources would be mitigated to the extent possible by management and planning. The remaining effect on scenic resources, which cannot reasonably be further mitigated, was evaluated to determine the extent of the adverse impacts on the viewing public (see Conclusion #5,A).

A discussion of the CLUP's (p. 142) development policy requiring that abandoned towers be dismantled is presented in Conclusion #8,E(3).

4. *Demonstrated need*[5] *in the community or area.* To demonstrate the need for an energy generation facility, the benefits to the people of the State of Maine, including the economic benefits and a market for the energy, must be shown. In the case of rezoning to a D-PD Subdistrict, where the criteria for approval of development in Section 685,B(4) of the Commission's statute also applies, "the Commission shall permit the applicant to provide evidence on the economic benefits of the proposal as well as the impact of the proposal on energy resources." This is also consistent with Section 10.21,G,8,a(5) of the D-PD Subdistrict rules, which require the applicant to present evidence that "the project is realistic" and that "a sufficient market exists for the goods and/or services the development will provide."

In addition to the evidence of the need for a project that must be submitted by a petitioner, the demonstration of need is typically supported by letters from affected businesses, the public, organizations, legislators, services, and others likely to be affected by the proposal. The need for the proposed RWF within the state as an energy generation facility has been adequately demonstrated, as follows:

A. *Public support.* The record shows that public support for the proposed RWF is significant. The petitioner submitted documentation of public support, and a substantial number of additional letters were submitted to the file during the review and public hearing processes. The number of letters received in support was greater than those received in opposition, in particular by those living within Maine. Support for the RWF was expressed by the general public, several legislators; a former Governor of Maine; many businesses; regional development groups; many groups statewide with various backgrounds; students; engineers; some of the academic community; and other professionals. Many letters of support were received from hikers using the AT; from individual members of Intervenors NRCM, MAS, ATC and AMC, including a former Executive Director of MAS; and a long-time member of The Nature Conservancy.

Letters received by the Commission, letters submitted by the petitioner to support its demonstration of need, and the results of the petitioner's surveys collectively indicated that the proposed RWF will be received positively by as many hikers in Maine using the AT than those expressing a negative response.

B. *Public/economic benefits.* The petitioner presented substantial evidence of the benefits of the proposed RWF. These benefits were substantiated in comments

[5] LURC's guidance document *"Clarifying the Rezoning Criterion of Demonstrated Need"* does not apply for a rezoning to a D-PD Subdistrict (p.1).

from the OEIS and the PUC, in testimony from various Maine businesses and groups, and by several Intervenors. The power that would be produced is already being marketed to Maine consumers with a long-term fixed-price contract, which will not only be consistent with Maine's energy policies, but also be an economic benefit to the State.

The petitioner testified that during construction, approximately 100 jobs would be created, as well as up to 10 long-term jobs. At the public hearing, the Greater Franklin Development Corporation also noted that the construction of the proposed RWF would cause indirect creation of jobs as local businesses supply services and materials. The petitioner has already employed Maine companies, and testified it intends to continue to do so whenever possible. During the public hearing, testimony from Maine investors in support of this project was also presented. Studies and articles cited by the petitioner and others showed that real estate prices would not be likely to change directly as a result of the wind farm.

Based on the record, the proposed RWF would not directly interfere with the ability of anyone to use the area for non-motorized and motorized recreation, and any adverse effect on recreational users of the project area would not be undue. Many recreational users and businesses expressed support, for example the Sugarloaf ski resort, which is adjacent to the project area. The number of recreational users that would stop coming to the area, including hikers on the AT, as a result of the RWF is likely to be small; most would continue to use the area. Any decrease of recreational users is likely to be balanced by new visitors who come to see the wind farm, if the experience of other wind farms is repeated. Intervenor WMF stated that it sees the proposed RWF as a viable part of the hiking experience. If the trail proposed by the WMF were constructed, the RWF would be collaborating in a project that would increase recreational use of the area.

C. *Consistency with State energy policy and initiatives.* Windpower is a renewable, indigenous, non-polluting source of energy, and is sustainable indefinitely. The evidence in the record shows that the proposed RWF would be a benefit to the State because it would help stabilize power prices and power production in Maine. The RWF would also help decrease the New England region's dependence on fossil fuels, and the pollution they cause.

While there was a great deal of debate in the public hearing testimony over whether emissions would be displaced or avoided in the near term, no one denies that the development of clean power sources can ultimately reduce air pollution. The petitioner presented this concept as the equivalent amount of pollution that would be avoided. While one cannot count molecules directly, as a principal it is a correct assertion, and the PUC supported the petitioner's statements. Whether emissions would be either be displaced or avoided in the short term is irrelevant because the issue is about Maine's support for renewable and clean sources of power, and the need to aggressively pursue it.

Based on the record, Maine's energy policy clearly is in support of the development of renewable power sources and windpower is included in the

State's energy mix as a viable option. Several key features of the State's perspective are relevant to the assessment of the proposed RWF:

(1) The State energy policy strives for increased production by renewable sources by 10% by 2017, and both the OEIS and the PUC stated that the RWF is an important step toward obtaining that goal.
(2) The PUC's 2005 report on the feasibility of windpower in Maine found that there is a sufficient market.
(3) The Greenhouse Gas Law (PL 2003) resulted in MDEP's Climate Change Action Plan.
(4) The Northeast Regional Greenhouse Gas Initiative established a region-wide level of cooperation in pursuing the goal of reducing polluting emissions.

D. While the issue of electricity transmission congestion within Maine is presently being evaluated by the PUC, both the PUC and OEIS stated that transmission congestion would not be a serious issue for the production of power by the proposed RWF (see Findings of Fact #60 and #61). Transmission and interconnection issues are not handled by LURC, but understanding the role that ISO-NE plays in the development of energy in Maine, and the implications of its analysis of the proposed RWF, can help the Commission evaluate the need for the RWF. For any new generator, transmission and interconnection are dealt with by ISO-NE in accordance with FERC standards. The SIS conducted by CMP and ISO-NE established how the grid would not be impacted as the proposed RWF is integrated. Beyond that, the deregulation that occurred in the late 1990's resulted in market forces determining whose power gets to market first.

5. *No undue adverse impact on existing uses or resources.* Certain aspects of the proposed RWF that are relevant to the Commission's statutory criteria for amendment of land use district boundaries [*i.e.,* Section 685-A(8-A),B: "The proposed land use district has no undue adverse impact on existing uses or resources."] are also relevant to the Commission's criteria for approval of a development permit [*i.e.,* Section 685 - B,4(C): "Adequate provision has been made for fitting the proposal harmoniously into the existing natural environment in order to assure there will be no undue adverse effect on existing uses, scenic character, and natural and historic resources in the area likely to be affected by the proposal."] In both criteria, the word "undue" is used to explain the extent beyond which an adverse impact or effect would be unacceptable and approval could not be granted. As defined, the word "undue" means "exceeding what is appropriate or normal; excessive"[6].

A. *Scenic character*. [Sections 10.25,E and 10.21,G,8,a(6) of the Commission's Land Use Districts and Standards also apply in the evaluation of effects on scenic character.]

The visual assessments produced by the petitioner, the Intervenors, and LURC's expert witness resulted in several key factors being evident. First, the proposed RWF will be visible because commercial wind turbines are very large,

[6] The American Heritage® Dictionary of the English Language, Fourth Edition copyright ©2000 by Houghton Mifflin Company. Updated in 2003.

and when viewed from a distance of several miles will be a prominent feature in the landscape, regardless of mitigation. However, to be an economically viable windpower facility, wind farms in mountain areas must be located along a ridgeline because the wind resource would be greatly diminished by locating the turbines further down slope.

Second, the record shows that the greatest visual effect would be on the users of the AT because of distance and the openness of certain views. In contrast to the opposition of Intervenors NPS and the Appalachian Trail groups, AT users independently expressed both support for and opposition to the RWF, based on letters received by the Commission, and on the petitioner's surveys which found that slightly more individuals believed the RWF would be an appropriate object in the landscape than those that did not. The 800 feet of the AT along Sugarloaf Cirque, the open views from the AT four to six miles from the project area, and the view from the top of Sugarloaf Mountain (where the entire Sugarloaf ski resort is also visible) are the primarily locations that would be visually affected by the RWF. Otherwise, the views of the RWF available to the public in general would be intermittent and/or at a distance of 4.5 miles or more.

Third, based on the testimony presented by LURC's expert witness Dr. Palmer, the distance from which the RWF would be visible is likely to be less than the 15 mile radius of the study area. As noted by Dr. Palmer, because of the width of the turbines and blades, under most atmospheric conditions the maximum distance from which the RWF would be visible is approximately 8.5 to 9 miles, which would in turn reduce the number of places from which the RWF would be visible.

In consideration of whether the proposed RWF would "block or interrupt scenic views", which is the language used in LURC's scenic character standards (reference Section 10.25,E,1,b), the turbines would be visible and would alter the view, but would not "block" the view of the landscape. Likewise, LURC's scenic character standard (reference Section 10.25,E,1,c) require a project to "preserve the natural character of the ridgeline". As noted by ATC/MATC expert witness Jean Vissering, the language in this standard does not seem to be designed to address this type of project (see Appendix A, section 3,E). In mountainous areas, wind farms are most likely to be located on ridgelines to be viable, and due to size and scale, cannot be camouflaged or hidden. The only option left for a proposed wind farm, if it where to be constructed at all, is to minimize visual impacts to the extent possible.

Much testimony was presented as to whether the site chosen by the petitioner is appropriate because of its proximity to the AT. Given the other site constraints (based on wind resource maps, known limitations for siting wind farms, and land availability) for developing a viable wind farm, the number of sites reasonably available in Maine, although not yet known, is likely to be limited. The choice of the proposed RWF site is discussed in Conclusion #8,A, and the scenic impact to the AT is also discussed in Conclusion #3,B(4).

B. *Wildlife, wetlands, and habitat.* Pre-construction studies and subsequent evaluations supplied by the petitioner and by the resources agencies have

indicated a low long-term potential for adverse impacts to wildlife, wetlands, and habitat. MDIFW stated that the wildlife and habitat assessments were done appropriately and no additional preconstruction studies will be required. The review of the wetland impacts and assessment by the petitioner by the State Soil Scientist and the ACOE determined that the information submitted was substantially accurate and conducted using the appropriate methods. The post-construction monitoring plans proposed by the petitioner and recommended by MDIFW should be prepared and submitted to the Commission for review and approval with the Final Development Plan.

(1) *Avian monitoring.* The results of the petitioner's pre-construction avian studies were credible, conducted appropriately, and sufficient to establish that the potential for an undue adverse impact to bird species breeding in, or migrating through, the project area is low. This conclusion was reached by MDIFW, which spent several years in consultation with the petitioner, providing guidance for the types of monitoring that should be done, and evaluating the results of the studies. MDIFW stated that the petitioner completed the pre-construction monitoring in accordance with its recommendations. The petitioner's studies showed that birds migrating at lower elevations tended to fly around the mountains rather than over the ridgelines, the migration route is not directly in the path of the rotors for most of the birds using the area, and the project area does not support high bird concentrations**.**

(2) *Bicknell's thrush.* Bicknell's thrush is listed as a Species of Special Concern in Maine (S3), but is not Threatened (S2) or Endangered (S1). After review of the petitioner's studies, and what is known about this species in general, MDIFW determined that no significant effect on the population of Bicknell's thrush in Maine as a result of the proposed RWF is expected, and that no additional pre-construction studies are needed. However, the petitioner should consult with MDIFW regarding the timing of construction in specific areas where Bicknell's thrush may nest, and a post-construction monitoring plan should be developed in consultation with MDIFW. MDIFW's recommendations should be incorporated into the Final Development Plan.

Approximately 30 to 40 acres of Subalpine Fir Forest on each summit would be permanently altered for the proposed RWF. The alteration areas would be narrow, and would be small relative to the extent of available habitat. The road and turbine pads edges would provide disturbed areas similar to those readily used by Bicknell's thrush, such as regenerating clear cuts. After construction, continued disturbance to breeding pairs by humans would be low, and the potential for collisions is expected to be low. Although Bicknell's thrush is most often found at high elevation sites, this species also occurs in clear-cuts with regenerating balsam fir, other similar disturbed areas, and at low elevation coastal sites. Bicknell's thrush is a neo-tropical migrant that is endemic to Northeastern America, breeding from the Catskills in New York to the northern Gulf of St. Lawrence and northeastern Nova Scotia in Canada, but whose population is declining primarily due to impacts to its winter habitat in the tropics (reference Exhibit #11,K).

(3) *Bat monitoring.* MDIFW evaluated the project area and the results of the petitioner's surveys. Sufficient information was supplied for the determination to be made that there is a low potential for excessive bats strikes by the proposed RWF and that no additional pre-construction studies are necessary. MDIFW noted that because the most likely potential for bat strikes is during migration when the bats are swarming, a post-construction monitoring plan should be developed in consultation with MDIFW and submitted with the Final Development Plan.

(4) *Fir Heart-leaved Birch Subalpine Forest.* In addition to the State-listed Bicknell's thrush (Sections B(2), above) and the northern bog lemming (section B(5), below), the Fir Heart-leaved Birch Subalpine Forest natural plant community found in the project area is rated as S3 (rare), but is not Threatened (S2) or Endangered (S1). The Maine Natural Areas Program (MNAP) identified this community in the project area as a part of a larger Subalpine Forest Ecosystem extending on to and covering most of neighboring Crocker Mountain. MNAP stated that because this community, which extends well beyond the project area, has been rated as "excellent", every effort should be made to minimize impacts to the community where it occurs on Redington and Black Nubble, and suggested various guidelines and limitations to be followed during construction (see Finding of Fact #62), which the Final Development Plan must address.

The record shows that the Subalpine Fir Forest habitat on Black Nubble has been heavily disturbed by timber harvesting. The Subalpine Fir Forest on Redington has not been recently harvested, but LURC's rules allow harvesting by permit. Overall, this community, while State-listed as S3, is common in the mountains of Western Maine. Its most important function in the project area is as habitat for Bicknell's thrush, which is discussed above in section B(2), above.

(5) *Northern bog lemming.* The northern bog lemming is State-listed as S2. MDIFW determined that the approach proposed by the petitioner to protect the northern bog lemming habitat on Redington is reasonable, given the existing knowledge of habitat preferences of this species as a niche specialist. Intervenor ATC/MATC's expert witness testified that the entire summit of Redington could potentially be habitat, but this conclusion cannot be verified. If true, the northern bog lemming, which inhabits high elevation forested wetlands (hence its rarity), could have an expanded range if more habitat is available, and therefore could be more common. Even if not common, and the entire summit were viable habitat, then all high elevation areas should be searched for this species prior to any activity occurring, which may not be practicable.

In addition to the proposed habitat protection, the petitioner testified that it would not conduct blasting in the road or turbine areas near the protected habitat. Finally, the petitioner proposed a three-year post-construction monitoring plan to ensure plant species promoting invasion by competing small mammals would not colonize the project area. Until definitive evidence exists that the northern bog lemming readily occurs in high elevations uplands

as well as wetlands, the proposed protection of the forested wetlands and the proposed 250 foot buffer, coupled with a three year monitoring plan is a reasonable approach.

(6) *Wetland and stream impacts.* Based on the evidence in the record, wetland and stream impacts were minimized and avoided to the extent possible in the context of the Preliminary Development Plan, and there is little evidence that indicates an extensive number of wetlands were either missed or misinterpreted. The wetlands and streams reported by the petitioner are a reasonable representation of the actual conditions in the project area and of the extent of the proposed impact, and are sufficient for the Preliminary Development Plan. There is no reason to expect that the area or quality of wetlands to be impacted by the RWF would be significantly different than those reported in the Preliminary Development Plan. The final wetland delineation and alteration areas would be submitted to the Commission with the Final Development Plan. For the Final Development Plan, which would be the permit to build, a complete wetland report, adjusted for changes to the layout of the project made since the submittal of the Preliminary Development Plan, is required.

(a) After consultation with the State Soil Scientist, some seepage areas and drainage swales identified as wetlands or streams by both the petitioner and Intervenors ATC/MATC's expert, Eco-Analysts, were found to not meet the definitions of a wetland or stream[7]. As such, non-wetland seepages and swales would not be included in the wetlands alteration review for the Final Development Plan. However, because the seepages and drainage swales are important hydrologic features, these areas must be identified and the appropriate erosion and sedimentation control measures and storm water drainage techniques applied. The measures needed to appropriately handle the slope hydrology for construction of the access roads were discussed extensively with the petitioner and laid out by the State Soil Scientist and MDEP (see Findings of Fact #58 and #59) in their review comments.

(b) Clearing of the tree layer in wetlands without removing the remaining vegetation does not completely alter a wetland, and the wetland functions and values are not completely lost. In many instances, the change of function is not significant. The record shows that within the project area, in particular along the lower elevation transmission line corridors where the majority of the wetlands are present, changes by clearing the tree layer would not be significant because in large part these areas have been repeatedly harvested and the habitat has long since been altered. Alteration of wetlands at higher elevations by clearing the tree layer, where harvesting has not previously occurred, would be minimal, if at all.

[7] Assessment of wetlands along the proposed access road and transmission line routes was complicated by groundwater seepage areas on steeper slopes were water does not remain long enough to create a hydric soil, or for conditions to develop that result in colonization by wetland plants. Assessment of streams in the project area was complicated by drainage swales that are not intermittent streams, but carry water briefly during heavy rains and snow-melt in the spring.

Since the most significant wetlands at the high elevation areas were identified as northern bog lemming habitat, the project layout was altered to avoid these wetlands, and the wetlands would additionally be protected by a 250 foot wide upland buffer.

(c) Stream buffer impacts have been minimized in accordance with MDIFW recommendations (see Findings of Fact #41 and #57). Transmission lines would cross approximately perpendicular to streams to the extent possible; buffers would be expanded up to 100 feet wide; and the line near Nash Stream substation was moved out of a floodplain. The petitioner must coordinate with MDIFW when doing in-stream work for the road crossings.

(7) *Amphibian breeding habitat.* By maintaining the hydrology of seepages and minimizing all wetland impacts, amphibian breeding habitat will be protected. In northern Maine, significant amphibian breeding habitat is often not a discrete vernal pool with definable boundaries, but is imbedded within a forested or scrub shrub wetland. In the project area, the cold, dry environment at the summits is less likely to contain significant amphibian breeding habitat than the wetter, warmer areas at the lower elevations. Likewise, seepage areas likely to be wet long enough to be significant amphibian breeding habitat occur at the lower elevations. Therefore, seepages and wetlands in the project area, particularly at lower elevations, likely to contain significant amphibian breeding habitat (as identified using the MDEP's indicator species), should be more closely scrutinized, and a proposal to do this must be included in the post-construction wildlife monitoring plans in the Final Development Plan.

(8) *Habitat fragmentation.* The Final Development Plan must provide any changes to or refinements of the areas to be altered, including clearing. The total area to be altered above 2,700 feet in elevation must not be substantially different than the estimates provided in the Preliminary Development Plan.

While permanent maintenance of a shrub community in transmission line corridors in upland areas alters habitat and subsequent use by wildlife, it does not constitute a complete loss of habitat because the area will continue to be used by wildlife, albeit possibly with a shift in species composition (see Conclusion #3,B(5), above). The evidence in the record shows that because the areas proposed to be altered for the RWF have largely already been impacted by timber harvesting, a significant change in species composition is not likely. The acreage to be affected by the proposed transmission lines constitutes a large percentage of the total permanent alteration area. Conversely, a larger portion of the parcels to be rezoned would not be altered and would remain available as forested habitat.

Because of previous harvesting above 2,700 feet in elevation in the project area, and the "bottleneck" identified by the petitioner in its public hearing testimony, the project area does not represent a significant fragmentation of the roadless area identified by Intervenor AMC (*i.e.* a large block of contiguous high elevation forest lacking roads or impacts due to clear-cutting, and not separated from the remaining forest by a "bottleneck" of one kilometer or less.)

The permanent alteration of approximately 85 acres of the Subalpine Fir Forest above 2,700 feet in elevation, and the effect on Bicknell's thrush, is discussed above in section B(2), above.

C. *Road construction.* The issues associated with the construction of the road, especially winter construction can be addressed if careful attention is paid to the provisions identified by the State Soil Scientist to maintain hydrology, stabilize slopes, minimize impacts by cut and fill areas, provide for an on-site engineer with expertise in storm water management at all times, and to restore vegetation after construction. In its petition and testimony, the petitioner showed it had consulted the State Soil Scientist to determine the best ways to address the site constraints, and many of the recommendations have already been incorporated in the design and plans for the roads.

(1) *Seepages and hydrology.* The petitioner plans to use the rock sandwich road design and other drainage features recommended to maintain hydrology. Field surveys to identify seepage areas and drainage swales have already been started. The petitioner also testified it would use an on-site engineer to properly apply erosion control and storm water management measures, and make adjustments as needed during construction to properly handle the mountain hydrology.

By properly implementing the proper erosion control and storm water drainage measures, the hydrology would be re-connected across the road, minimizing impacts. Storm water and subsurface flow would be collected and diverted in small increments, avoiding excessive channeling. Excessive phosphorus in runoff to streams would also be avoided because it would be diverted to forested buffers. Likewise, acidic runoff from black shale (if used for road construction) will be managed by diverting it into forested buffers.

(2) *Restoration of high elevation areas.* As discussed by the petitioner (see Finding of Fact #36), the Final Development Plan must include restoration plans for the high elevation areas. The requirements for restoration must incorporate the proposals made by the petitioner and the recommendations made by state agencies.

(3) *Roads on steep slopes.* The Final Development Plan must supply the construction details for road segments where the slope would be more than 10%, including cut and fill areas, surface stabilization, and cross-drainage. The erosion and sedimentation control and storm water management plans must include provisions for handling erodible soils.

(4) *Winter road construction.* As stated by the State Soil Scientist, the construction of roads in mountain areas will be expensive and difficult. However, he acknowledged that the turbine locations would have to be accessed by road, and commented that if his recommendations are strictly followed, the potential for impacts will be minimized. The requirements for the Final Development Plan for winter road construction are specified in the conditions of this permit.

(5) *Phosphorus evaluation.* The phosphorus evaluation presented by the petitioner in the Preliminary Development Plan, prepared in consultation with

the MDEP, showed that the phosphorus loading potential as a result of this project is expected to be within allowable limits, and is not an issue. However, if any aspect of the Final Development Plan would cause the phosphorus loading calculations to change significantly, then a revised phosphorus evaluation must be submitted in the Final Development Plan.

6. *Adequate provision for financial capacity*. Coupled with the materials submitted with the petition, the "Letter of Intent to Fund" from Edison Mission Energy (EME) and EME's 2005 Annual Report, submitted with the petitioner's "*Responses to Agency Questions*" (June 2, 2006), provided evidence of financial capacity to construct the proposed RWF. That the funding is to be provided by EME (of the Edison Mission Group) is also evidenced by the activities that have been funded to date in preparation for the project, including ordering the turbines.

   As stated in EME's "Letter of Intent to Fund", the funding is contingent upon a permit being obtained by the petitioner (and meeting several other contract obligations) and is subject to approval by their Board of Directors, "at their discretion." This language is customary for large business transactions and should not be viewed as diminishing the petitioner's evidence of adequate financial capacity for a development permit. The MDEP's Site Law rules and Maine's hydropower rules recognize this as part of the way large business interactions occur and make provisions for it in their requirements for providing evidence of financial capacity. However, a permit condition should be included in the Final Development Plan permit that would invalidate the permit if, prior to construction, the funding source were withdrawn, unless another funding source is reviewed and approved by the Commission. The petitioner should also include in the Final Development Plan evidence that the funding source does not intend to abandon the project when it is partially constructed, and that a contingency plan, should this situation inadvertently occur, has been developed.

   Finally, the financial viability of the project has also been demonstrated by the contract with the power marketer, Constellation New Energy. The testimony on transmission congestion, and how it would or would not affect the proposed RWF provided additional information on how the project may perform in the market once it is on-line (see Conclusion #4,E).

7. *Title, right, or interest.* The appropriate materials were submitted to establish that the petitioner has sufficient title, right, or interest for the proposed rezoning of the 1,004 acres to a D-PD Subdistrict. The petitioner testified to, but has not yet submitted, the documentation of title, right, or interest for the 15 acre parcel that would allow the ridgeline road on Redington to be entirely outside of the proposed 250 foot wide buffer area protecting the northern bog lemming habitat. The 15 acre parcel would not be included in the D-PD Subdistrict, but the proposed ridgeline road is an allowed activity in the adjacent P-MA Subdistrict by special exception (see Conclusion #10). Documentation of title, right, or interest for the 15 acre parcel must be submitted with the Final Development Plan.

8. *Planned Development Subdistrict (D-PD) Subdistrict rules* [Section 10.21,G of the Commission's Land Use Districts and Standards]

A. "*Best reasonably available site.*" Several Intervenors and the Commission's expert witness Dr. Palmer testified that because an alternative analysis was not included with the petition, a determination of whether the proposed RWF site is the "best reasonably available site", in accordance with Section 10.21,G,8,a of the Commission's Land Use Districts and Standards, could not be made based on the information provided. In response, the petitioner testified that of the sites reasonably available to the petitioner, the proposed RWF site was the most viable. The petitioner submitted general information about the various types of sites evaluated prior to choosing the proposed site, the constraints for siting a wind farm, and why the proposed site was ultimately chosen. The petitioner testified that 15 other sites were considered and stated the criteria used to evaluate the sites: sufficient wind resource; proximity to existing roads and transmission lines; appropriate topography; proximity to public resources; location of existing development; and availability of the land. The proposed RWF site was chosen because, of the sites available to the petitioner, this site held the greatest promise for a viable wind farm. Recognizing the site's constraints, such as proximity to the AT, the petitioner presented evidence of its plans to minimize impacts.

The phrase "reasonably available" infers that whether a site is obtainable or accessible, and whether a site will support a viable project are both part of determining if a site is the best site. It is unreasonable to expect that an applicant to purchase a different parcel of land without considering availability or cost, and unreasonable to expect a project depending on a particular resource be located where adequate resource is not available. However, it is reasonable to expect that an explanation of how and why the proposed site was chosen, and what alternative sites were reasonably available, be provided.

As an alternative to the proposed turbine configuration using both Redington and Black Nubble, Intervenor NRCM promoted the idea that a Black Nubble only project may be possible. The petitioner evaluated this option, and testified as to why it would not be financially viable while still providing the benefits to Maine businesses of stable, long-term power contracts (see Appendix A, section #1,D(1)(b) and section #4).

Intervenor Friends of the Western Mountains (FWM) raised the concern that the proposed RWF site is not viable because of harsh winter conditions. However, the petitioner testified that icing is not a consideration since the V90 turbines are designed for cold mountainous areas, and other wind farms worldwide have been constructed under similar conditions. While power production can be interrupted due to icing, wind farms typically supply power intermittently, such as during calm wind periods, and a temporary shut down caused by icing does not reduce windpower's reliability as a power source.

The proximity to the AT and opposition by NPS and the Appalachian Trail groups remains the biggest constraint for this site. However, taking into consideration that the petitioner evaluated other sites, the factors to be considered when choosing a site (wind resource, distance to infrastructure, availability of the

land, access), and the mixed response from the hiking and environmental communities (as evidenced by testimony presented by the public at the hearing and letters received by LURC), the proposed RWF site is the best site that was reasonably available to the petitioner. While road construction on steep slopes and in the winter present logistical issues, plans have been proposed to address these problems. In addition, any wind farm on a ridgeline in a mountainous area may be faced with similar road construction problems.

B. *Substantially equivalent level of protection.* Section 10.21,G,8(7) requires that an applicant provide "a general statement that indicates how the natural resources of the area will be managed and protected so as to reasonably assure that those resources currently designated within protection subdistricts will receive protection that is substantially equivalent to that under the original subdistrict."

The activities allowed in a P-MA Subdistrict by special exception (reference Section 10.23,G,3,d) are substantially equivalent to the activities proposed for the RWF. These activities include:

(1) Level B mineral exploration, which allows bulk sampling of mineral deposits up to two acres or up to removal of 10,000 cubic yards of materials;
(2) Level C road projects, which is the construction of new roads, including paved roads;
(3) Utilities facilities, including above and below ground transmission lines, communication towers, pipelines, above ground storage tanks, and other related structures; and
(4) Downhill skiing recreation facilities, including ski trails, chair lifts, lodges, and related structures.

All of the above activities could occur in a P-MA Subdistrict upon issuance of a permit by special exception, which requires that an applicant show "there is no alternative site suitable to the proposed use and reasonably available to the applicant", and "the use can be buffered from other uses and resources within this subdistrict with which it is incompatible." The potential for impacts to the mountain resources of scenic character and wildlife habitat, and the potential for bird and bat mortality, would be similar if communication towers, roads, bulk extraction of mineral deposits, and downhill ski trails were constructed..

The extensive site review required by the D-PD Subdistrict rules results in a level of avoidance, minimization, and post-construction monitoring greater than typically is required for special exception activities, in part because the specificity of the D-PD rules. Therefore, the level of protection of the areas to be rezoned to a D-PD Subdistrict for the proposed RWF would be equivalent or greater than the areas would receive as a P-MA Subdistrict. The petitioner conducted studies to determine the nature of the resources in the project area, evaluated the level of potential impact, and proposed ways to protect and monitor those resources to assure they receive protection (see Conclusion #5). This additional layer of resource protection would be lacking without the rezoning to a D-PD Subdistrict.

Because no development would occur on the 3.5 acres of P-SG Subdistrict, there would be no change in the level of protection in those areas.

C. In accordance with Section 10.21,G,2 of the Commission's Land Use Districts and Standards, the proposed decreased setbacks of the turbines from the property lines may be allowed. The petitioner showed good cause for the setbacks to be less than 400 feet, and that no impact due to the reduce setbacks would occur. The petitioner obtained easement agreements from abutting landowners Dallas Company and Plum Creek, but was unable to obtain an agreement in writing from the U.S. Navy. However, the Navy was well informed of the turbines' proximity to its facility, and stated verbally to both the petitioner and to LURC staff that it declined to comment in writing on the project. At no time shall the turbines be set back less than 25 feet from the extended tip of the blade to the property line.

D. In addition to the submittals required for the Final Development Plan under Section 10.21,G,10 of the Commission's Land Use Districts and Standards, the petitioner must incorporate in the Final Development Plan, and submit to the Commission for review and approval, plans for the proposed RWF that incorporate the review comments provided by state and federal agencies; statements made in the testimony presented by the petitioner; and the conclusions of the Commission regarding the turbines, roads, transmission lines, all associated and activities and structures, and post-construction management plans and environmental studies and monitoring.

E. Several other details were noted during the review of the Preliminary Development Plan that must be included in the Final Development Plan.

(1) The petitioner made arrangements with CMP to construct the transmission line under and along the Route 27 right-of-way, and included the MDOT permit with the petition. In the spring of 2006, the petitioner determined that CMP's schedule for constructing the line would not match the timing of the construction schedule for the wind farm. The petitioner then stated it would be making arrangements to have a different company do the work. The petitioner must supply the updated plans, and a copy of any associated MDOT permit, for the construction of this portion of the proposed transmission line.

(2) Intervenor ATC raised a concern for the potential for fire due to lightning striking a turbine, to which the petitioner responded with testimony on the V90 turbines' lightning protection and the low risk of fire. In the petition, the entities responsible for fire control in the project area were named, and the petitioner stated it would be discussing the detailed plans for the proposed RWF with local fire departments. Documentation of any agreements or other provisions made to coordinate with local fire departments or the Maine Forest Service for fire protection should be supplied in the Final Development Plan.

(3) The CLUP (p. 142) includes a policy for infrastructure development that acknowledges the need for a developer to prepare a plan to remove abandoned communication towers. The concern raised by the Commission regarding the need for a decommissioning plan for the proposed RWF is similar to the

concerns for communication towers, such as visibility and deterioration of the structure after abandonment. While the petitioner did not believe the Commission has the authority to request a decommissioning plan, the CLUP policy for infrastructure development provides the basis for this requirement. In the event that the RWF is abandoned in the future, a secured plan to remove the above-ground portions of the turbines and transmission lines, including a revegetation plan, is prudent, and must be included in the Final Development Plan.

9. The maintenance building and the temporary concrete batch plant included in the Preliminary Development Plan, but located outside the D-PD Subdistrict in an M-GN Subdistrict, are similar to activities that would otherwise be allowed in a M-GN Subdistrict, and can be allowed in accordance with Section 10.22,A,3,c(30) of the Commission's Land Use Districts and Standards as "other structures, uses, or services which the Commission determines are consistent with the purposes of this subdistrict and of the Comprehensive Land Use Plan, and are not detrimental to the resources or uses they protect." The maintenance facility would not be larger than, or involve activities different than, a Maine Department of Transportation or forest operations maintenance building, both of which are allowed in an M-GN Subdistrict. The proposed maintenance building and the wind farm maintenance and operations activities would likely be compatible with existing forest operations or other activities occurring in the M-GN Subdistrict.

   The temporary concrete batch plant, although a specific location was not finalized for the Preliminary Development Plan, would be located in an M-GN Subdistrict, would encompass less than five acres of land, and would be comparable to other activities allowed in a M-GN Subdistrict (reference Section 10.22,A,3,c(18)), such as a gravel pit with a temporary crusher or asphalt batch plant. Water withdrawal, particularly in the amounts proposed, is allowed in both an M-GN Subdistrict and a P-WL Subdistrict. The petitioner shall submit the plans for and the location of the temporary concrete batch plant, the amounts of water needed, the water source to be used, including plans to monitor water levels during use to assure there is not an undue adverse impact on surrounding resources, with the Final Development Plan.

10. The transmission lines and roads associated with the proposed RWF where they would not be within the D-PD Subdistrict, would in part be located within P-MA Subdistricts. Both are activities allowed by special exception in a P-MA Subdistrict, in accordance with Section 10.23,G,3,d(3) and (5) of the Commission's Land Use Districts and Standards. The evaluations of the best reasonably available site and no undue adverse impact given to the proposed project for review of the D-PD Subdistrict and Preliminary Development Plan, is equivalent to, or better than, the review that would be afforded under the special exception criterion of no alternative site and buffering of uses. Therefore, these activities may be allowed in a P-MA Subdistrict, upon submittal and approval by the Commission of the Final Development Plan.

    The transmission lines and Nash Stream substation are utility facilities and are allowed uses in the M-GN Subdistrict, P-SL Subdistrict, and P-WL Subdistricts in

which they would be located. The road expansions and new roads in these subdistricts would qualify as either Level A or Level C road construction. Level A road construction is a use allowed without a permit in all three subdistricts. Level C road construction is a use allowed with a permit in the M-GN Subdistrict and P-SL Subdistricts, and by special exception in a P-WL Subdistrict (reference Sections 10.22,A,3; 10.23,L,3; and 10.23,N,3).

Stump (*i.e.* solid waste) disposal areas smaller than 2 acres in size, if needed after the removed stumps are processed to prepare erosion control mix for soil stabilization, would be located in the M-GN Subdistrict and are a use allowed with a permit in that subdistrict (reference Section 10.22,A,3,c(23)).

11. The Commission will provide for review and subsequent monitoring of the proposed activities associated with the RWF located outside the D-PD Subdistrict, including access roads, transmission lines, the Nash Stream substation, the maintenance facility, the temporary concrete batch plant, and water use in the Final Development Plan and not review these activities as separate permitting actions here. All the proposed activities located outside the proposed D-PD Subdistrict are uses allowed in the subdistricts in which they are proposed.

Therefore, the Commission APPROVES the Preliminary Development Plan and Zoning Petition ZP 702 submitted by Maine Mountain Power, LLC to rezone 1,004 acres from (P-MA) Mountain Area Protection Subdistrict and (P-SG) Soils and Geology Subdistrict to (D-PD) Planned Development Subdistrict, per the attached map, and grants preliminary approval for the development plan for a 30 turbine wind farm, as detailed in the attached Appendix C, subject to the following conditions which generally, but not comprehensively, outline the materials that must be submitted for review and approval with the Final Development Plan:

1. The petitioner shall submit all exhibits and statements required for the Final Development Plan in accordance with Section 10.21,G,10 of the Commission's Land Use Districts and Standards. In addition, the petitioner must incorporate: (a) in consultation with the state and federal agencies any recommendations agreed to by the agencies and the petitioner during the review of the proposed Preliminary Development Plan as reflected in the record, including, but not limited to, the Maine State Soil Scientist, Maine Department of Environmental Protection, Maine Department of Inland Fisheries and Wildlife, and Maine Natural Areas Program; (b) proposals or agreements made in testimony presented by the petitioner; and (c) the materials required by the Commission in the following conditions.

2. The petitioner shall submit plans showing the final road, crossing, and transmission line designs and locations. The submittals shall include storm water management techniques and erosion and sedimentation control measures to be employed to maintain hydrology. The Final Development Plan must include the following:

A. The petitioner shall provide the final sizes of all areas to be altered for the roads by filling, grading, clearing, or any other activity. The total area to be altered above 2,700 feet in elevation must not be substantially different than the estimates provided in the Preliminary Development Plan.
B. During construction, the roads and areas cleared for transmission lines must be no wider than as specified in the Preliminary Development Plan. After construction, the roads must be allowed to revegetate to 12 feet wide, and transmission lines must be as specified in the Preliminary Development Plan.
C. Seepages and drainage swales that have been located during field investigations must be identified on the site plans.
D. The petitioner shall employ the rock sandwich road design and other storm water management features as recommended by the Maine State Soil Scientist to maintain slope hydrology.
E. The erosion and sedimentation control and storm water management plans must include provisions for handling erodible soils.
F. An engineer with expertise in storm water management must be present during construction to identify seepages and drainage swales not found during the field investigations, and to make adjustments to the road design during construction to maintain the slope hydrology. The technical background of, and plan for the implementation of the engineer must be submitted to the Commission for review and approval prior to construction.
G. The slope of the roads must not exceed 14%. Construction details for road segments where the slope would be more than 10% must include cut and fill areas, surface stabilization, and cross-drainage.
H. The final construction plans must included provisions to monitor the type of rock to be used for fill material, to test the pH, and ensure that excessively acidic runoff to streams does not occur.
I. The petitioner shall submit a Winter Construction Report with the final construction schedule, which must include at a minimum the timing of the stages of construction and the order in which each segment of the project would be constructed. The length of road to be under construction at any one time must be specified, or an alternative plan presented, and how the work will be done under frozen conditions.
J. If substantially more than the phosphorus evaluation submitted with the Preliminary Development Plan, and/or in excess of the allocations for phosphorus loading for the target water bodies, the petitioner shall submit a revised evaluation of the phosphorus loading potential for the project.
K. The revised road route on to the 15 acre parcel to avoid the north bog lemming habitat protection area must be evaluated for the presence of wetlands, steep slopes, and any other feature that would require blasting, or otherwise create a constraint, to assure that the route is feasible.
L. The blasting plan must be amended to avoid blasting for the road, and for turbines #6, and #7, near the protected northern bog lemming habitat.

3. The petitioner shall submit the final turbine locations, each turbine pad size, and the foundation types to be used. The total area to be altered for the turbines must not be

substantially different than the estimates provided in the Preliminary Development Plan. The extended tip of the blade of each turbine must be set back at least 25 feet from the property boundaries.

4. The petitioner shall submit the proposed three-year post-construction environmental monitoring and mitigation plans with the Final Development Plan, incorporating the recommendations made by the Maine Department of Inland Fisheries and Wildlife and the Maine Natural Areas Program, as specified below.

   A. The post-construction monitoring plans for avian and bat monitoring, as proposed by the petitioner and recommended by Maine Department of Inland Fisheries and Wildlife, must be submitted. The plans must be prepared in consultation with Maine Department of Inland Fisheries and Wildlife.
   B. The details of the northern bog lemming habitat protection area and post-construction monitoring plan proposed by the petitioner must be submitted. The plan must be prepared in consultation with the Maine Department of Inland Fisheries and Wildlife.
   C. The petitioner shall consult with Maine Department of Inland Fisheries and Wildlife regarding the timing of construction in specific areas where Bicknell's thrush occurred. A post-construction monitoring plan for Bicknell's thrush, developed in consultation with Maine Department of Inland Fisheries and Wildlife, must be submitted.
   D. The post-construction monitoring plan must include an assessment of seepages and wetlands in the project area likely to support the Maine Department of Environmental Protection indicator species determinant of significant amphibian breeding habitat.
   E. The guidelines suggested by the Maine Natural Areas Program for activities within the Fir Heart-leaved Birch Subalpine Forest natural community must be incorporated into post-construction management plans, and where practicable, into the construction plans.
   F. The post-construction environmental monitoring plans must include a provision for the revegetation of areas showing no indication of natural revegetation after one growing season.

5. In areas above 2,700 feet in elevation, erosion control mix must be used to stabilize disturbed areas. Where possible, surface soils containing the seed bank must be stockpiled and mixed with the erosion control mix. After construction, all turbine and crane pads must be revegetated as proposed in the Final Development Plan.

6. *Wetlands and streams.*

   A. The petitioner shall submit a final wetlands report, adjusted for changes to the layout of the project made since the submittal of the Preliminary Development Plan. The report must include the total final proposed wetland alteration area in LURC jurisdiction, the wetland areas to be altered, type of wetlands and type of alterations, wetland impact avoidance and minimization, and a summary of the

wetland functions and values to be altered or lost. The delineated wetlands must be shown on the site plans, and field sheets and the methodology employed must be included. Perennial and intermittent streams must be identified and the impact areas quantified. The wetland report must supply all information required for review under Section 10.25,P of the Commission's Land Use Districts and Standards.

B. Transmission lines must cross approximately perpendicular to permanent streams, or where not possible, as agreed to by the Maine Department of Inland Fisheries and Wildlife, and vegetated stream buffers must be at least 100 feet wide. The petitioner shall coordinate with Maine Department of Inland Fisheries and Wildlife during in-stream work for the road crossings.

7. The petitioner shall submit Spill Prevention Control and Countermeasures Plans for the construction and operation of the wind farm, and for the maintenance facility.

8. The petitioner shall submit the final locations and dimensions of the proposed stump disposal areas, the approximate distance to groundwater, and plans to stabilize and close out these areas after construction. The disposal of stumps by grinding for erosion control mix and/or by burying in the roadway must be accounted for in the plans.

9. The petitioner shall submit the proposed location of the temporary concrete batch plant, the period of time the plant will remain at the site, the hours of operation, and an estimate of the truck traffic to and from the site. The petitioner shall also submit an estimate of the amount of water needed to prepare the concrete and to be used for dust control during construction, the length and expected timing of the withdrawal period(s), the proposed water source(s), and how the source(s) would be monitored to assure that no undue adverse effect on surrounding uses occurs as a result of the withdrawal.

10. Prior to construction, the petitioner shall submit the name of the company that will construct the underground transmission line under and along the Route 27 right-of-way. A copy of the updated Maine Department of Transportation permit must be submitted prior to construction.

11. The petitioner shall submit documentation of additional coordination with local fire departments for fire protection for the Redington Wind Farm that has occurred since the Preliminary Development Plan was submitted, and any agreements or provisions made thereof.

12. The petitioner shall submit the details of the plans to transport the turbines from the point where they are off-loaded from railroad cars to the project area, including the roads to be used, any constraints such as bridges or sharp turns, other provisions to be made to allow safe transport, and copies of any other State or federal permits being obtained, if available at the time of filing.

13. The petitioner shall submit a plan to remove the above-ground portions of the turbines, the above-ground transmission line system, and the meteorological reference towers, including a revegetation and monitoring plan to assure that colonization occurs, to be implemented if the wind farm is abandoned for a substantial period of time. In the plan, the ridgeline and access roads may remain, but the traveled surface must be gravel and no wider than 12 feet.

14. If the source of funding for the Redington Wind Farm, as documented in the Preliminary Development Plan, becomes unavailable, the petitioner shall submit for Commission review and approval an alternate funding source that will meet the criteria in Section 10.25,C of the Commission's Land Use Districts and Standards. If an alternate funding source is not approved by the Commission, the permit shall be deemed voided.

15. The permittee shall provide evidence that the funding source does not intend to abandon the project after construction has started, and a contingency plan should this situation inadvertently occur.

16. Documentation of the petitioner's title, right, or interest in the 15 acre parcel for the relocation of the ridgeline road on Redington Pond Range must be submitted with the Final Development Plan.

17. This zoning petition and Preliminary Development Plan is approved only upon the above stated conditions and remains valid only if the petitioner complies with all of these conditions, and as otherwise provided in the Plan, and only if a Final Development Plan is submitted and approved by the Commission in accordance with this decision and otherwise in compliance with the Commission's regulations. If no Final Development Plan has been submitted within eighteen months of the date of issue of this decision, the zoning shall revert to the original Commission zoning in existence immediately prior to this decision.

In accordance with 5 M.R.S.A. section 11002 and Maine Rules of Civil Procedure 80C, this decision by the Commission may be appealed to Superior Court within 30 days after receipt of notice of the decision by a party to this proceeding, or within 40 days from the date of the decision by any other aggrieved person. In addition, where this decision has been made without a public hearing, any aggrieved person may request a hearing by filing a request in writing with the Commission within 30 days of the date of the decision.

DONE AND DATED AT FARMINGTON, MAINE THIS 24th DAY OF JANUARY, 2007.

By:_____
Catherine M. Carroll, Director

This change in subdistrict designation is effective on February 7, 2007.

APPENDIX A: PUBLIC HEARING TESTIMONY
Summaries of pre-filed testimony, post-hearing written comments, and rebuttal submitted by the petitioner and the Intervenors

1. *Maine Mountain Power (MMP).*

In addition to the discussion presented in the petition (see Finding of Fact #18), MMP cited several goals and policies of the CLUP, and explained how the proposed Redington wind Farm (RWF) would be consistent.

A. *Consistency with the Comprehensive Land Use Plan (CLUP).*

(1) *Energy resources.* The goal for energy resources is to "Provide for the environmentally sound and socially beneficial utilization of indigenous energy resources where there are not overriding, conflicting public values which require protection." The policies then direct the Commission to "encourage energy conservation and diversification and the use of indigenous renewable resources to increase the state's energy self-sufficiency", "allow for new or emerging technologies which do not have an undue adverse impact on existing uses and natural resources", and "permit new energy development where their need to the people of Maine has been demonstrated and they are sited, constructed, and landscaped to minimize intrusion on natural and human resources."

The urgent need to develop renewable energy sources in Maine and the economic benefits were testified to by the Maine Office of Energy Independence and Security (OEIS) and the Maine Public Utilities Commission (PUC), several legislators, the Maine Lung Association, and Intervenor Ed Holt, among others. The PUC and the OEIS stated that transmission congestion is not a serious issue for the RWF, that the introduction of windpower in general and this project in particular will benefit Maine's energy future; and that the RWF would be a substantial step toward achieving Maine's energy goals.

Benefits to Maine by the RWF include the production of 260,000 MWhrs/yr of clean renewable energy, the sale of renewable power to Maine customers using fixed-price long-term contracts, and a move toward reducing Maine's dependence on natural gas. Forty-nine percent (49%) of Maine is presently supplied by gas-fired power plants, which drives up electricity prices. Since 2004, energy prices in New England have increased 44%.

(2) *Air resources.* For protection of air resources, the CLUP recognizes a broader perspective, stating a goal to "protect and enhance the quality of air resources throughout the jurisdiction," and a policy to "encourage state, federal, and international initiatives directed at reducing emissions of air pollutants." The installation of the RWF would help to work toward a reduction in global warming by increasing the potential to reduce greenhouse gases and other pollutants that are degrading Maine's human and natural environments. The RWF would produce no emissions, and would reduce air pollution by 732,188

pounds of pollutants per day by displacing the operation of fossil fuel generators. The avoided emissions benefits claimed for the RWF were confirmed by Intervenor Conservation Law Foundation (CLF) expert witness Colin High, who stated that the RWF would result in the displacement of generation by fossil fuels in New England, avoiding emission of CO_2, NO_x, SO_x, particulate matter, volatile organic compounds, CO, and other toxic air pollutants; and would contribute to the mitigation of the impacts of global warming.

(3) *Development.* The petitioner testified that the CLUP sets goals and policies to balance competing interests based on the needs and values of the jurisdiction as well as the State, and states a broad goal of multiple resource use. A goal stated in the CLUP for development is to "balance the economic benefit that Maine people derive from the natural resource-based industries of the Commission's jurisdiction, especially the maintenance and creation of quality jobs, with protecting the environmental quality and special values of the area" by "encouraging those forest and recreational industries and other resource-based enterprises which further the jurisdiction's tradition of multiple use without diminishing its principal values." A CLUP development policy also discusses balancing protection of wildlife habitat with a reasonable consideration of the management needs and economic constraints of the landowner.

B. *Statutory rezoning criteria and criteria for approval of a development permit [12 MRSA, Sections 685-A(8-A) and 685-B(4)]*.

The petitioner submitted testimony regarding the Commission's statutory criteria to amend a district boundary and criteria for approval of a development permit[8]. The petitioner noted that the statute states the economic benefits of a project and its impact on energy resources may be considered as a part of the criteria for approval of a development permit.

(1) Public benefit and public support for this project has been demonstrated. More than 2,000 signatures in support were obtained; a substantial number of letters expressing public support were sent to LURC; and the project was endorsed by legislators, four newspapers in the state, and many businesses.

The project would provide substantial public benefit in the form of jobs, tax revenue, and as a non-polluting energy source. The proposed RWF presents an opportunity for energy diversification and use of indigenous resources, to increase Maine's energy self-sufficiency, direct creation of 100 construction and 10 long term jobs, payment of substantial state and local property taxes, and lease payments to landowners (see Finding of Fact #17,A). Indirect benefits could include, as the Director of the Greater Franklin Development Corporation testified, the creation of approximately 200 additional new jobs during construction and operation, and purchases of local goods and services.

[8] While need must be demonstrated for the rezoning, LURC's guidance document *"Clarifying the Rezoning Criterion of Demonstrated Need"* does not apply for a rezoning to a D-PD Subdistrict (p.1).

The petitioner noted that no testimony presented by the Intervenors substantiated an adverse effect on tourism, recreation, or real estate prices by the wind farm. Conversely, the project is supported by the President of the Sugarloaf Ski Resort, the Western Mountains Foundation Trail/Hut System, and many local business owners (see Finding of Fact #75). Credible studies referenced by Ed Holt and Jim Palmer in their testimony supported that there is likely to be little or no adverse effect. Conducted in April 2006, state-wide survey showed a ratio of more than 9 in support to1 opposed for the project.

(2) *No undue adverse effect on scenic character and the Appalachian Trail.* The petitioner asserted that the proposed wind farm would not have an undue adverse effect on the scenic character of the area, and would meet LURC's scenic character standards.

(a) The project would not block or interrupt views from roads or waterbodies, and was designed to reduce any visual impact on the area surrounding the project to the extent practicable. The project would be visible to less than 5% of the viewing area located within a 15 mile radius. From most lakes, roads, and settlements the project would appear insignificant; and the project would be located in a region with other large-scale projects that are visible in the landscape. The petitioner asserted that every possible effort has been made, short of not constructing the project, to preserve the character of the ridgeline. Visual impacts have been mitigated by moving roads and transmission lines out of potential AT viewsheds, reducing road widths, developing a tool kit for slope treatments, and planning for revegetation after construction. Roads, an airport, golf course, clear-cuts, gravel pits, commercial development, homes, and ski areas are readily apparent throughout the study region, including from the Appalachian Trail (AT).

(b) In regard to the view from public property, the petitioner contends that the AT is the primary public resource from which the project could be viewed. The turbines may be seen from the AT for less that 9% of the 34 miles between Bigelow and Saddleback. Hikers using the AT would have at least a partial view of the RWF for a distance of approximately 3.2 miles, and a full view along 1,000 feet of the trail. The closest distance from the RWF to the AT is 1.1 miles at South Crocker Mountain. However, there is no open view from that point. There is also an open view of the RWF that is possible only if a hiker walks down an unmarked side trail. Otherwise, the open middle ground views would be for 800 feet along the AT at Sugarloaf Cirque (distance 2.9 miles) and from the top of Sugarloaf Mountain (distance 3.8 miles, not on the AT). All other views of the RWF from the AT would be in the background (4+ miles). The USDA Forest Service standard distance for background is four miles or more.

(c) Wind farms have been found to be compatible with hiking trails in other places, for example the Pacific Crest Trail (a National Scenic Trail) and the International AT. The CLUP and LURC's rules do not give the AT special treatment other than protection of its corridor by a P-RR Subdistrict extending 250 feet on either side of the trail. Activities are

regulated within the subdistrict, not miles away, and many uses are allowed in a P-RR Subdistrict.

(d) The petitioner noted that NPS testified that visual changes that can be seen from the AT, at any distance, that persist for 10 years or longer are an unacceptable modification, but that many such changes exist in the area. While NPS asserted that MMP had ignored the AT, the petitioner countered that many steps, short of abandoning the project, were taken to understand, minimize, and mitigate the visual impacts.

(e) The petitioner noted that Jean Vissering, expert witness for Intervenors ATC and MATC, acknowledged that the fear of visual impacts [due to wind farms] may be unjustified, that over time people will see them more positively, and sacrifice of some ridgelines may be needed to balance the harm done to the environment by burning fossil fuels. The Market Decisions survey of AT hikers in 2003/2004 found that the turbines would have a "slightly negative to no impact on the quality of their hiking experience." Many letters sent to LURC stated that the RWF would be a positive addition to the landscape because it represents a progressive approach to solving global warming. The petitioner contends that hikers would see one way in which Maine is constructively dealing with global warming, and that a wind farm is an important step in the cultural changes in the U.S. The AT was set up originally to include cultural resources such as farmland, byways, and settlements, as well as remote areas.

(f) The CLUP discusses the expansion of ski resorts proximate to the AT, as a result of the review of the Saddleback ski resort D-PD Subdistrict, noting that sensitive layout and buffering can minimize impacts to the AT. The Commission determined that Saddleback, which abuts the AT, would not have an undue adverse impact on the trail. The petitioner noted that the land area disturbed by the Sugarloaf and Saddleback ski resorts is equal to or greater than the land area to be altered by the proposed wind farm.

(g) While lighting is required by FAA, lighting only half the turbines would reduce nighttime visual effects. There would be no lighting on the blades or towers, the lights would not be strong or dazzling, and because of distance there would be no reflections on waterbodies.

(3) *No undue adverse impact to natural resources.* The petitioner asserted that an overriding environmental benefit of the development of wind energy is to help reduce the air pollution that is harming the State's forests, wildlife, wetlands, and waterbodies. In addition, they pointed out that considerable effort went into avoiding and minimizing direct effects by the proposed RWF on habitat, wildlife, and wetlands.

(a) *Avian and bat impacts.* In its review comments, MDIFW stated the avian and bat surveys conducted for the RWF were done appropriately (considering when the surveys were done and the methods typically used at the time), and the petitioner conducted all the surveys requested by MDIFW. MDIFW determined the studies were sufficient to assess the risk of collision at the site.

In response to Intervenor Maine Audubon Society's (MAS) assertions about bird and bat mortality associated with wind turbines, wind farm sites with high mortality have been in areas of high bird or bat concentrations and/or at sites with old wind turbine technology. Currently, the average bird mortality is 2.3 birds per turbine per year, which is very small compared to other types of structures, such as buildings and communication towers.

The petitioner asserted that MAS' testimony that the industry standard is to use radar in the vertical mode since at least 1991 is incorrect. This technology only became readily available after 2004. The petitioner also argued that the recent criticism of another company by Woodlot Alternatives for not using certain avian monitoring methods, which were also not used on this project, is not relevant because those methods were not available for use when the RWF studies were done.

The petitioner countered that MAS' statement about the petitioner under-reporting passage rates was incorrect, and was based on MAS' flawed analysis. MAS used the wrong math to calculate the passage rate increase. The petitioner noted several other places where MAS did not use appropriate methods in their analysis. The petitioner asserted that MAS does not understand passage rates: passage rate is an average rate of targets per hour of sampling, not a total count of targets.

Finally, the petitioner pointed out that MAS' assertion that its avian and bat monitoring protocol should have been used is unreasonable since those protocols were developed after the RWF studies were completed. Furthermore, the petitioner's consultant, Woodlot Alternatives, contributed to the development of the MAS protocols in part based on the experience gained studying the RWF site.

(b) *Bicknell's thrush*. The petitioner monitored and identified habitat being used by the Bicknell's thrush, and worked with MDIFW to determine if the project would have an undue adverse effect on the species. MDIFW stated the project would be unlikely to have a measurable effect on the population of this species in Maine, if certain breeding season time constraints are followed.

Testimony by MAS regarding the impact on Bicknell's thrush by this project was overstated. MAS selectively used certain studies and rejected others. Bicknell's thrush is known to be in lower elevation disturbed sites in New Brunswick and downeast Maine, among other areas. The petitioner argued that, conversely, the proposed wind farm would help reduce the air pollution known to be adversely impacting Bicknell's thrush habitat.

The petitioner asserted that the comparison of this project to the ski resort study is relevant, as confirmed by MDIFW. The creation of edge habitat by the proposed wind farm would be less of an impact than alpine ski trails. Bicknell's thrush is known to use disturbed sites, such as areas with ski trails. Bicknell's thrush was observed by the petitioner using the

cleared meteorological tower sites and around forest edges over a 13 year period.

Finally, the petitioner noted that comments by MAS comparing male courtship displays to woodcock were out of context. Bicknell's thrush flies from trees and vegetation, while woodcock flies from open areas. Any potential for mortality associated with male courtship flights is low because the display occurs only for a few minutes out of the entire breeding period and would occur in less than 2% of the entire available breeding habitat at the proposed RWF site.

(c) *Wetlands and streams.* Wetlands were identified in the project area using the ACOE three-parameter method. Intervenor ATC/MATC's expert witness Eco-Analysts (EA) asserted that the petitioner had under-reported wetlands, but the petitioner countered that EA actually over-estimated the number of wetlands present because they did not use the three-parameter method and allowed non-wetland seepages and wet spring conditions to influence their determinations. The "qualitative approach" stated in the petitioner's wetland report, criticized by EA, refers to descriptive field notes and use of the wetland determinations for planning purposes, not a lack of proper methodology. The boundaries of all wetlands and streams to be impacted by the RWF identified during the Preliminary Plan Stage would be confirmed at the Final Plan stage. Non-wetland, hydrologically sensitive areas and seepages will also be identified.

(d) *Northern bog lemming*. The petitioner asserted that their approach to protection of the northern bog lemming habitat at the RWF site is reasonable and balanced. The site was surveyed for small mammals on two different occasions during a ten-year period. Because the lemming may use upland areas adjacent to the wetland, a 250 foot buffer would be placed around the forested wetland habitat on Redington where the lemming was found. The proposed ridgeline road has been moved entirely out of the buffer by purchasing a 15 acre lease option. The petitioner asserted that the construction activities to install the wind farm would not directly impact the habitat. The topography in the project area near the protected wetland would not require significant cut, fill, and blasting; and will support the road design and supplemental buffering.

Intervenors suggested that the lemming may wander throughout the entire forested summit area, but the literature shows the species is a niche specialist usually found in high elevation bogs and wetlands. The petitioner contends that the discovery of raspberry seeds in the stomach of a lemming does not necessarily imply the extensive use of upland areas because several raspberry family species are found in wetlands or near wetland edges.

(e) *Habitat fragmentation.* The petitioner noted that the project area is surrounded by industrial forest, which has already been impacted by roads and transmission lines. In addition, the project area is a very small portion of the overall forest habitat. Permanent project impacts would be only 0.4% of the 21,200 acre block of forest above 2,700 feet that is of interest

to various Intervenors. In addition, the project area is within a portion of this block that has already been fragmented by clear-cutting[9].

The petitioner contends that it has demonstrated the species present would not be substantially adversely affected by the proposed project, and that viable populations would be maintained. They noted that moreover, real and perceived impacts directly due to the project pale in comparison to the impacts of global warming. Lacking action, climate change threatens half of the world's forests, with 15% to 37% of species predicted to be extinct by 2050.

(f) *Unreasonable soil erosion and adverse impacts to hydrology*. The petitioner's design and environmental teams worked collaboratively to address the sensitive nature of the soils in the project area, to minimize the disturbed area, and to preserve the hydrology/natural flow patterns and soil characteristics. The petitioner stated that the proposed "tool-box" approach includes design and erosion control details specifically developed for the needs of this project, and is not a "one-size fits all" approach. This approach is intended to allow adjustments on-site during construction as needed, rather than lock the contractor in to a set of pre-determined plans. The State Soil Scientist stated the proposed approach is "a more precise construction technique than the standard set of plans." (See Findings of Fact #58 and #59 for additional discussion.)

(g) In its prefiled testimony, MMP testified that it would be agreeable to a permit condition that required permanent conservation of 300 acres of land, or would contribute to conservation of 300 acres of high elevation land with high ecological value as a part of conservation of a larger parcel.

C. *Criteria for amendment of district boundaries.* Both the CLUP (p. 58-59) and the (D-PD) Planned Development Subdistrict rules (Section 10.21,G,2(b)) indicate that a D-PD Subdistrict is the appropriate zone for a commercial windpower project.

D. *Criteria for approval of a Preliminary Development Plan.* The petitioner provided the following arguments in support of its assertion that the proposed wind farm is consistent with the D-PD Subdistrict rules.

(1) *Best reasonably available site*. For a D-PD Subdistrict, the Commission's criteria for a rezoning is replaced by a demonstration that the proposed project site is the "best reasonably available site" [Section 10.21,G,8,a(2)]. The D-PD Subdistrict is intended for projects that are dependent on a particular feature or character of the area in which the project is proposed. The petitioner testified that prior to selecting the proposed RWF site, 15 sites in four New England states were considered: nine along the coast and six in mountain locations. The sites were rejected because they did not have sufficient wind resource (coastal locations tended to have a poorer wind resource - Class 4 or better is needed to build an economically viable wind farm); were distant from

[9] Intervenor AMC's definition of "un-fragmented" does not include areas that have been clear-cut.

infrastructure; were within State or national parks, conservation areas; or where not otherwise available.

(a) The proposed RWF site was chosen because it has an excellent wind resource of Class 6 to 7; has the best topography (north/south facing ridgelines with prevailing winds from the west); is near existing infrastructure (land management roads, Route 27, Bigelow substation, and the Boralex/Stratton transmission line corridor); and is at the fringe of the jurisdiction (close to Sugarloaf ski resort, Saddleback ski resort, Rangeley, Carrabassett Valley, Stratton, and the Boralex/Stratton biomass plant). The importance of a good wind resource for production of energy was explained in the petition: "A small difference in wind speed can mean a large difference in available energy and in electricity produced, and therefore, a large difference in the cost of the electricity generated. There is little energy to be harvested at very low wind speeds (6 mph winds contain less than one-eighth the energy of 12 mph winds.)"

(b) Intervenor NRCM proposed that the petitioner should consider the option of only siting the proposed RWF on Black Nubble Mountain. After evaluating this option, the petitioner determined it would result in a 25% increase in price for the electricity produced. NRCM asserted that the increase could be compensated for by revenue enhancements, cost reductions (including REC values), capacity payments, energy prices, and finance savings. NRCM did not identify specific savings, but suggested the use of a lower voltage transmission line to reduce capital costs. The petitioner responded that the Black Nubble only option would increase electricity losses and result in a loss of the ISO-NE queue position. Mission Energy evaluated a down-sized project, factoring in all potential savings suggested by NRCM, and determined that the electricity would have to be sold at a higher price. Constellation New Energy has planned to market the electricity to Maine customers at a lower price. The petitioner asserted that NRCM's suggestion would result in a higher price to Maine customers, which would eliminate some of the economic benefits stated for the project.

In addition, the petitioner noted that the Black Nubble only option would not substantially reduce the visual impact from the AT or from many of the other viewpoints. Reducing the wind farm size by 40% would reduce the visual impact along 800 feet of the AT (*i.e.* the partial views from the portion of the AT on Crocker Mtn. and Sugarloaf). The areas with the most direct views of the wind farm face Black Nubble, not Redington.

(2) *Protection substantially equivalent to that under the P-MA Subdistrict [Section 10.21,G,8,a(7)]*. The petitioner noted that it spent years of effort to identify and best determine how to protect the natural resources at the proposed wind farm site. The environmental studies and assessment were done to determine the resources at the site and develop mechanisms for protection. Plans prepared to minimize impacts to wetlands, hydrology, wildlife habitat, soils, and the visual character of the area were presented with

the petition. In addition, of the 1,004 acres to be rezoned, only 85 acres (or 8%) would be permanently altered.

The activities proposed are similar to activities allowed by special exception in a P-MA Subdistrict, for example: utility facilities, transmission lines, communication towers, level C road construction, level B mineral exploration, and structures relating to downhill skiing.

E. *Winter road construction.* The petitioner provided the following arguments to demonstrate that they have the expertise, experience, and financial capacity to construct the roads in an environmentally sound manner.

(1) The team assembled is experienced in winter road construction. Mortenson has done similar winter road projects (31 miles in Ontario). The Maine contractor, Sargent Corporation, has undertaken numerous projects involving winter construction (including I-95), many of which used the MDOT's specifications; and is the largest contractor in Maine. A set of site-specific details has been developed by DeLuca-Hoffman. The soils have been assessed by a professional soil scientist, and the State Soil Scientist was consulted frequently. A specialized engineer would be hired to provide additional winter construction consultation.

(2) A Winter Construction Report would be prepared for the Final Plan, integrating state agencies into the planning and review process. Additional resources would be devoted to the project to complete it in a timely manner. Among other things, some of the key elements of the plan would include proper equipment maintenance, conservative engineering of peak spring and storm flows, stabilization of slopes with erosion control mix, and the employment of a full time erosion/sedimentation control storm water specialist at all times.

(3) Techniques to be used for winter construction include: (a) frozen soils would not be placed in the roads or crane pads; (b) insulating tree and snow cover would be left in place until it is time to construct the road; (c) embankments would be constructed to full height as soon as possible; (d) embankments would be limited to 500 foot to 1,000 foot lengths to minimize the time an area is exposed; (e) overnight frost penetration would be broken up; (f) travel over non-disturbed areas would be limited; (g) frost-free rock would be used instead of soils for fill; (h) frozen soils would be removed and stockpiled; (i) heated truck bodies would be used; and (j) any off-mountain stone crushing operation would have winter protection.

(4) In addition to addressing limitations, the petitioner stated several benefits of winter construction: (a) dust control; (b) baseline subsurface conditions are more consistent; (c) lack of the high runoff storms which can stress erosion control measures - soils do not erode during snow storms; (d) there would be a limited length of road under construction at one time; and (e) permanent erosion control measures could be constructed sooner.

(5) In response to Intervenor ATC/MATC's expert witness who testified that another company in Maine doing winter construction had gone bankrupt, the petitioner noted that no support for this assertion was provided. For example,

no background of the contractor's experience or finances was supplied to determine if the case is comparable.

Regarding the issue raised by Intervenor ATC/MATC's expert witness about bridges to be rebuilt, the petitioner noted that the Gagnon report only assessed upgrades needed for the existing bridges. The subsequent necessary engineering and design was included in the schedules and cost estimates. Specific details for each bridge upgrade would be in the Final Plan. The petitioner asserted that Intervenor ATC/MATC's expert's testimony only addressed one approach to upgrading the bridges, and did not consider other options such as temporary bridges, steel plating, upgrading timber decking, and abutment upgrades.

Finally, the petitioner contends that the concern raised about the length of the road to be constructed is not relevant to the rezoning request, but Mortenson and Sargent have ample experience to construct the proposed roads.

(6) The design team worked closely with the environmental team to address concerns about the fragility of the soil in the project area. On-site inspections by a professional soil scientist have been identifying seepage and shallow water level areas. A hydrologic plan is being prepared for the Final Plan, identifying the techniques to be used in each area of concern. The hydrologic and soil protection measures recommended by the State Soil Scientist have been incorporated (see Finding of Fact #58).

(7) The "tool box" of techniques developed for the project would provide back-up for the design during winter construction. The petitioner asserted that Intervenor ATC/MATC's comments on the "tool box" approach indicated that they do not understand the use of this approach, which applies well-conceived design elements specific to the site discovered during the preliminary design phase. The "tool box" approach also demonstrates efforts to identify issues and provide solutions, and was developed in collaboration with the State Soil Scientist who endorses it (see Finding of Fact #58).

F. *Fire hazard.* The minimal potential for fire hazard with the use of the Vestas V90 turbines was disputed by Intervenor ATC, who asserted that wind turbines pose a significant fire risk. MMP expert Bulow testified that the V90 turbines are equipped with lighting protection and do not pose a fire risk. To date, only two fires have occurred out of 2,000 V80 turbines, none resulted in uncontrolled fires, and none were due to a lighting strike. The petitioner contended that world-wide, very few fires in wind turbines have occurred, and those were primarily in older turbines without lightning or fire protection. The V90 proposed for the RWF has a detection and alarm system (see Finding of Fact #24,E).

G. *Financial capacity*. In response to Intervenor ATC/MATC's comments regarding financial capacity, the petitioner asserted that an appropriate demonstration of financial capacity was provided in the petition and in the "*Responses to Agency Questions*" (June 2, 2006). The Letter of Intent to Fund from the Edison Mission Group information established it as the funding source. A Letter of Intent to Fund

is one of the types of evidence specified under MDEP's Site Law as providing evidence of financial capacity, and is appropriate for submittal in this instance (see Findings of Fact #51 and #52).

---

2. ***National Park Service (NPS).***

The NPS expressed opposition to the proposed Redington Wind Farm (RWF), with the basis for the opposition being their objection to the proximity of the RWF to the AT, and the resulting scenic impact. The RWF would be located 1.1 mile from the trail at the closest point, frequently would be clearly visible along a stretch that is approximately 4 miles from the trail, and at a viewing distance of 2 miles or less the wind farm would dominate the landscape

A. NPS stated that it has not opposed other windpower projects, for example the Searsburg, Vt. project, because they have been proposed at distances greater than 4 miles from the trail. NPS also stated that [by using the 4 mile distance to define background] it does not suggest that an 8 mile wide no-development be created along the AT corridor. However, NPS' position is that the scale of the proposed RWF in conjunction with the site's proximity to the trail is unacceptable because of unmitigatable visual impacts and the alteration of the perception of remoteness along this stretch of the AT. NPS asserted that the proposed turbines would be taller than any other structure in Maine.

B. NPS indicated viewpoints are the most important places on the AT, and these are precisely the places that would be impacted by the proposed RWF. Most of the other development in the vicinity of the project referred to in the petitioner's visual assessment is thousands of feet below hikers on the AT, enhancing the sense of remoteness for hikers using the trail. In contrast, NPS asserted that the turbines would be at approximately the same elevation as hikers on the AT.

C. NPS argued that the petitioner did not recognize the status of the AT as a National Scenic Trail and unit of the National Park System, and did not take into account the significance of the AT in its visual assessment. NPS provided background information on the history of the AT; the management of the AT in Maine by ATC and MATC, among others; and a summary of NPS and ATC management policies. NPS asserted that LURC's rules and CLUP are consistent with those policies, as evidenced by the (P-RR) Recreation Protection Subdistrict protecting the AT corridor and the goal and policies of the CLUP to "conserve and protect the values of high mountain areas from undue adverse impacts."

D. NPS also quoted from the 1973 Maine Trails System Act, which states: "The Maine Trail system consists of: [B.] Trails providing for the appreciation of natural and primitive areas and for the conservation of significant scenic, historic, natural or cultural qualities of the areas through which the trails pass and offering primarily the experience of solitude and a self-reliance in natural or near natural

settings. Rights-of-way and buffer areas may be established and maintained to further that experience, and no use of development is permitted that threatens the primitive character of the land. The Appalachian Trail is included as a primitive trail in the Maine Trails System Act."

E. NPS further contended that windpower is not appropriate for the Western Maine mountains, and that Maine should develop siting guidance prior to decisions being made on windpower projects to eliminate controversy. NPS asserted that the AT should be given special emphasis [by LURC] because of the public benefit and its importance to its public management groups.

F. The NPS asserted that because no alternative sites for the wind farm were evaluated in the petition, it could not determine if a more suitable location for the RWF is available.

G. The NPS employed landscape architect Eric Crews of the U.S Forest Service in North Carolina to review the visual assessment section of the petition and present expert testimony. A fundamental part of Crews' assessment was that the 34 mile section of the AT between Route 4 and Route 27 provides a backcountry hiking experience, that a change to this perception along this stretch is the issue, and that remoteness is undermined by "man-made alterations of the landscape." Crews asserted that the "natural-appearing" views along this stretch of the AT create the sense of remoteness.

(1) Crews challenged the petitioner's definition of "undue" (*e.g.* "undue adverse effects") as "greater than necessary" and proposed that "extreme or excessive" would be better synonyms.

(2) Crews referred to LURC's Chapter 10 standards in Section 10.25,D, which call for "preserving the natural character of the ridgeline" and asserted that this could not be done if the proposed RWF were constructed because the natural character would be altered. Crews further asserted that the project would "block or interrupt the view" because it would break visual continuity.

(3) The methodology of each visual assessment expert was discussed at the public hearing. The USDA Visual Management System, developed by the USDA Forest Service, and used for assessment in national forests, national parks, and along the AT, was defended as being the most widely accepted method. Crews' visual assessment using this system resulted in a determination that the RWF would be an "unacceptable modification" to the landscape, if the land were a part of a national forest.

(4) Crews used computer-generated images rather than the photo-simulations used by the petitioner, asserting that the his simulations are superior because they require "no intermediate data processing or artistic interpretation." However, Crews removed the screening vegetation from his simulation of the north peak of Crocker Mountain, stating that there are many decisions that must be made to create simulations, such as choosing vegetation characteristics and setting atmospheric conditions. The ATC supplied Crews' with vegetation data on Redington for his simulation, but conversely he made

the point in his testimony that the petitioner should not have relied on third-party sources for data.

H. NPS asserted that the sound effects of the proposed RWF on the AT were not adequately studied, stating that the petitioner did not consider prevailing wind direction, which may increase the level of sound at the AT, or discuss the effect on "natural quiet" expectations for park-like settings.

I. NPS expressed concern that the Maine Historic Preservation Commission had not consulted NPS regarding the proposed RWF's effect on historic resources, questioned if the initial concerns raised by MHPC had been addressed, and believes that a full cultural resource review should be done under Section 106 of the National Historic Preservation Act.

J. NPS also raised concerns similar to those raised by ATC, MATC, and MAS regarding the avian and bat assessments; soils, water and vegetation assessments; and the proposed approach to erosion and storm water control.

---

3. *Appalachian Trail Conservancy (ATC) and Maine Appalachian Trail Club (MATC), the Appalachian Mountain Club (AMC), and Maine Audubon Society (MAS).*

Intervenors ATC, MATC, AMC and MAS, all of which expressed opposition to the proposed Redington Wind Farm (RWF), were consolidated as a group that submitted the following testimony:

A. *Consistency with the CLUP*. The Intervenors referred to the Commission's broad goals stated in the CLUP (p. 134) and stated their position that the protection of resources at the RWF site outweighs the need for the project. The Intervenors further asserted that windpower should be cited only in low value areas, citing the location of development policy in the CLUP which states, "Guide proposals for major new waste disposal and similar facilities to locations on the fringe of the jurisdiction that have good existing road access, low natural resource values, and are separate from incompatible land uses." The Intervenors went on to cite the CLUP as stating the "focus of the zone is the resource, not the energy that can be produced by it."

In response to testimony by the petitioner, the Intervenors retained their position that other roads in places such as Mt. Washington, where the road has not diminished the recreation value, are irrelevant to this project. They believe that the presence of the Navy survival training facility abutting the parcels to be rezoned only underscores the remoteness of the site, and ensures the site will remain relatively undeveloped. They concluded that LURC jurisdiction is supposed to be about remoteness, and the fact that other mountain areas have been developed makes Redington more important to maintain as an undeveloped site.

Intervenor ATC testified to the significance of the AT as a unit of the National Park System, and expressed concern that the petitioner does not understand this because their visual assessment said there are no national parks in the vicinity of the project. ATC also found it inexcusable that the petitioner's expert did not know that nearby Mr. Abraham is owned by the Maine Bureau of Parks and Lands.

ATC refuted the petitioner's suggestion that a wind farm may have cultural value, stating that they should be viewed in the same manner as any other electric generation facility. Interpreting the results of the petitioner's 2003 Market Decisions survey, ATC stated that the RWF would diminish the scenic quality of the trail, cannot meet the policies in the CLUP for protection of scenic resources, and cannot meet the provisions of LURC's Scenic Character standards in Section 10.25,E,1 of the Commission's Land Use Districts and Standards.

B. *Demonstration of need*. The Intervenors asserted that the petitioner has not demonstrated the need for the proposed RWF, and cited statements from LURC's guidance document "*Clarifying the Rezoning Criterion of Demonstrated Need*" as evidence. The Intervenors also objected that the wind data used to evaluate the project was not supplied by the petitioner (which was not supplied because the petitioner determined the information is confidential business information). Therefore, the Intervenors asserted that the public benefit and dependence on the resource at the site, the "best reasonably available site" criteria in the D-PD Subdistrict rules, and the claimed energy benefits could not be assessed. Finally, the Intervenors noted that there had been strong opposition expressed by the local community.

C. *Mitigation by reduced emissions.* The Intervenors disagree that direct impacts to natural resources caused by the proposed RWF are mitigated by the reduced air emissions and by refraining from timber harvesting at the site. They cited the testimony by FWM expert witness Hewson, which contradicted the petitioner's assertions. They further asserted that the petitioner did not provide substantial evidence of the reduced emissions, stating that mercury would not be reduced because generation by natural gas would be the most likely to be displaced. Therefore, the statement that a reduction in mercury would benefit Bicknell's habitat is also false. The Intervenors asserted that carbon dioxide reduction would happen independently of whether the RWF is built or not because of the greenhouse gas reductions projected by the New England Renewable Portfolio Standards. Finally, the Intervenors proposed that SO_x and NO_x would be displaced by the project, but not reduced, because of the emissions "cap and trade" program.

The Intervenors also stated that because the proposed mitigation by protection of 300 acres of land off-site did not include details its value could not be evaluated.

D. *Preliminary Development Plan*. The Intervenors asserted that the amount of detail in the Preliminary Plan on the impacts of the project is not enough to

approve the Plan. Accurate assessment must be presented at this stage, and should not be completed at the Final Plan stage. The Intervenors assert that only minor adjustments should be made at the Final Plan stage.

The Intervenors asserted that the petitioner has not provided for a substantially equivalent level of protection by the proposed D-PD Subdistrict, and that the development will have greater impacts than those allowed in the current P-MA zone. They noted that comparable projects would only be allowed by special exception in a P-MA Subdistrict if no alternative site were available.

ATC questioned whether the proposed site for the RWF is the best reasonably available site. While they concede the wind resource is probably of sufficient strength at the site, it could not be independently verified or compared to other sites because the wind data were not supplied. The Intervenors argued that the site is not "reasonably available" because it is proximate to the AT and has important wildlife value. They also noted that the site has steep slopes and the proposed road building will be challenging. They argued that the site has higher natural resource value than other wind farm sites in the northeast.

The Intervenors pointed out that the RWF is opposed by several environmental organizations, including AMC, MAS, ATC, MATC, and NRCM, and that ATC and NPS have not opposed other wind farms.

E. *Visual impact*. The petitioner's characterization of "undue adverse effects" as no "greater than necessary" was challenged by the Intervenors, who proposed that "excessive, immoderate or unwarranted" would be better synonyms for undue. ATC's visual expert, Jean Vissering, also criticized the petitioner's statement that there would be no "undue adverse effects" because they have gone to "great lengths to minimize visual and other impacts." Vissering's position was that to demonstrate impacts have been minimized to the greatest extent possible, there must be an analysis of alternative locations, which was not done.

The Intervenors objected to the visual impact of the project because it would affect six public resources, including the AT, the Bigelow Preserve, and Mt. Abraham. Moreover, the proposed project location would be near the AT, a nationally significant recreation resource. As opposed to the definitions of background used by the petitioner, NPS, and LURC expert Jim Palmer, Vissering located the threshold for 'background' at 10 miles, and asserted that the views from the AT less than 10 miles distant would be significantly impacted. She suggested that the language in LURC's rule to "not block or interrupt scenic views" is designed for a different type of development. She also clarified that the nighttime lights will be visible, but they will not create a "sky glow", and instead will be more like red stars, visible from a long distance. Vissering concluded that the view from the AT would be significantly affected by the presence of the proposed wind turbines.

Intervenor ATC opposed the RWF because of the visual impact along the stretch of the trail from Route 4 to Route 27. ATC testified that the ski resorts in the region are only minimally visible from the AT. Other than the tower at the summit of Sugarloaf Mtn., the Sugarloaf ski resort is only visible from one viewpoint, and Saddleback is only visible along a 0.2 mile long section of the

trail. ATC quoted the CLUP as expressing "significant concern" about the impacts of ski resorts on mountain resources (p. 74), and asserted that the proposed RWF would have a far greater impact.

F. *Seepages and hydrology*. The Intervenors objected to the winter construction of roads, noting that the State Soil Scientist expressed opposition to it. However, the Intervenors expert testified that, regardless of time of the year the construction is done, the roads would impact hillside seepage areas and that the hydrology would be significantly altered. Because amphibians use seepage areas, their habitat will also be impacted. MAS's witness testified that Redington is the "most seepy" mountain she had ever seen.

G. *Wetlands and streams*. Based on the site visits conducted by the Intervenors' expert, Eco-Analysts (EA), and its review of the materials submitted, EA asserted that the petitioner under-reported wetlands and streams in the project area. EA found no reference to hydric soils or wetland delineation in the petition, and stated it did not appear that wetland delineations were done. No field wetlands or stream data sheets were submitted. Several small wetlands at the summit of Black Nubble were not identified by the petitioner. EA identified certain wetlands as vernal pools during its site visit, and stated that they may be significant because a wood frog was seen during the site visit. [Note: Wood frog is an indicator species for significant vernal pools under the MDEP's definition.]

EA believes that stream crossings require a permit in LURC jurisdiction, and that crossing impacts were not included in the petitioner's wetland impact assessment.

EA noted that the project would impact more than nine acres of wetland, if the areas described by the petitioner as "direct" and "indirect" impacts are both included, and questioned why the petitioner segmented the wetland impacts into two types. Indirect impacts were defined by the petitioner as the cutting, but not complete removal, of vegetation. EA asserted that clearing should be treated the same as any other wetland alteration.

Finally, EA objected to the determination of the wetlands at the site made by the State Soil Scientist because he only visited a small number of the areas in question.

H. *Avian impacts and Bicknell's thrush.* Intervenor MAS criticized the methods used by the petitioner to monitor avian use of the project area, stating they did not properly assess altitude, passage rates, the total number of birds likely to be in the project area, and the area in which migrating birds would be located. MAS asserted that the petitioner did not use the proper care to survey avian use of the project area, and that not using MAS' current protocol is irrelevant. However, MAS included its draft protocol as Exhibit 1 in its prefiled testimony as the type of methodology that should have been used to monitor bird and bats.

MAS asserted that the passage rate reported by the petitioner is the highest ever recorded, that the petitioner did not compare the passage rate to the altitude at which the birds fly, and the petitioner underestimated the total count by 25% by

not surveying during the first part of migration. MAS calculated a higher passage rate, and said the petitioner under-reported.

MAS also asserted that the petitioner incorrectly assessed the area of the project that birds would fly over, and incorrectly assessed the number of birds likely to be in the rotor swept area. MAS estimated 3,200 birds in the rotor swept area per migration, and assumed that all potentially could be killed.

MAS stated that 136 acres of prime Bicknell's thrush habitat would be destroyed, and that it would take 8 to10 years for the project area to be habitable again. MAS asserted that the comparison of the project to a ski area is not correct, and that the study cited is not applicable because of the amount of time (40 years) the ski area had been altered.

MAS believe that the Bicknell's thrush using the project area may exhibit behavior changes, that the remaining habitat would be degraded, and that there would be continuing risk of collision. MAS noted there have been no studies of the effects of windpower plants on Bicknell's thrush, and that the male is at risk of collision during its courtship flight, which is similar to the woodcock.

I. *Northern bog lemming*. The northern bog lemming is listed as Threatened (S2) in Maine. The Intervenors' expert witness concluded that although the petitioner has proposed to locate the Redington Mountain ridgeline road outside the forested wetland where this species was found, as well outside a 250 foot buffer, the road would still be located in northern bog lemming habitat. The witness asserted that blasting and construction would destroy lemming habitat because he believes all areas at the summit are potential habitat. He based this assertion on a study that found raspberry seeds in the stomach of a northern bog lemming, and concluded that the lemmings may use upland areas as well as the high elevation forested wetlands it is known to inhabit.

J. *State-listed rare species and natural communities*. The Intervenors asserted that although seven State-listed species were found by the petitioner within the project area, they believe the proposed RWF could potentially impact as many as 17 species. The Intervenors also noted that the turbines and ridgeline access roads would result in the clearing of 135 acres of Fir-Heart-leaved Birch Subalpine Forest, a State-listed S3 natural community.

K. *Habitat fragmentation and roadless areas*. Intervenor AMC delineated at least 5,000 acres of roadless areas in New England. Their protocol excludes timber harvested areas and roads detectable by satellite imagery, and is intended to result in identifying areas free of roads and other permanent human impacts. Forests that are 35 to 40 years old or more, and skid trails and partial harvested areas are included. Bottlenecks less than one kilometer in width are not allowed. AMC has identified Redington and Black Nubble as part of a large roadless area above 2,700 feet in elevation that is 21,200 acres in size. The Intervenors noted that the project would result in clearing of more than 300 acres of vegetation, much of which would not be revegetated.

L. *Road construction.* The Intervenors' road expert cited several disadvantages of winter road construction: (1) surface materials must be removed to a depth of 4 to 6 feet (per MDOT specifications); (2) removed frozen materials must be stockpiled, and cannot be used as fill; (3) equipment breaks down; (4) drainage features cannot be installed in frozen ground; and (5) winter road construction is very expensive, noting that a contractor in Adamstown went bankrupt doing winter road construction.

The road expert further noted that the Gagnon report on the bridge upgrades that was included in the petition suggested many upgrades would be needed, but questioned why no designs were submitted. The road expert criticized the "tool box" approach to erosion and sedimentation control proposed by the petitioner, asserting that it would not provide site-specific information. The road expert concluded that the proper steps have not yet been taken by the petitioner to plan and design the roads.

M. *Title, right, or interest.* The Intervenors asserted that the petitioner has not demonstrated adequate title, right, or interest in the project area. Although this objection was raised by the Intervenors' attorney during his review of the petition, and the petitioner submitted additional information and testimony, two remaining concerns were raised: (1) The IP Road option agreement held by the petitioner does not allow for the road to be upgraded, and it expired on March 1, 2006; and (2) the lease agreement for the 15 acres on the summit of Redington that was testified to during the hearing was not submitted. The Intervenor also stated that for the area of the 15 acre lease option, the petitioner should submit evidence that there are no wetlands in that area, that a road is feasible there, and there would be no blasting, in keeping with the petitioner's testimony.

N. *Financial capacity*. The Intervenors asserted that the petitioner has not adequately demonstrated financial capacity. They noted that while Edison Mission Group (EMG) wrote a letter stating they may fund the project, the record also shows that EMG could choose to abandon the project after permit approvals are obtained, leaving the petitioner to build the project. They also noted that MMP provided no evidence of its own financial capacity in its petition to rezone, and did not provide it in response to MAS' discovery request.

O. *Fire risk.* Intervenor ATC expressed concern about the risk of fire in a turbine due to a lightning strike, citing several news articles about fires in wind turbines, and asked how such a fire would be fought at the proposed RWF site, especially in winter. ATC noted that the cleared areas around the turbines would not be large enough to provide fire protection, especially after revegetation.

---

4. *Natural Resources Council of Maine (NRCM).*

Intervenor Natural Resources Council of Maine (NRCM) does not support the Redington Wind Farm project as proposed, but instead endorsed a scaled-back 54

megawatt (MW) project on Black Nubble coupled with permanent protection of Redington Pond Range. NRCM stated it supports windpower development in Maine in general as an important part of a collective response to the threat of climate change, but also supports land conservation and protection of areas with significant habitat values and remote resource characteristics.

NRCM asserted that the petitioner failed to demonstrate that the project would not have an undue adverse impact, and failed to demonstrate that the project would utilize the best reasonably available site. NRCM argued that development on Redington Pond Range would negatively impact the sub-alpine ecosystem, fragment Bicknell's thrush habitat, and diminish views from the Appalachian Trail. NRCM argued that Redington Pond Range is one of only two mountains with elevations exceeding 4,000 feet that are not protected from development. NRCM supported locating turbines on Black Nubble because those forests are already fragmented, it is on the periphery of Bicknell's thrush habitat, and the turbines would be more than three miles from the Appalachian Trail.

NRCM asserted that the scaled-back project they support would still be economically viable. Jonathan Winer of La Capra Associates, Inc., in his expert testimony on behalf of NRCM, stated that the petitioner's proposal would have lower costs on a per turbine basis, greater energy output, and lower costs per megawatt-hour output than NRCM's scaled-back proposal. Winer went on to say that a combination of achievable revenue enhancements and cost savings would be necessary for a scaled-back project to provide the investor with an acceptable level of profit. However, Winer also asserted that demand for renewable energy will continue to grow in New England as states work to meet their Renewable Portfolio Standard quotas, and that both the current proposal and NRCM's scaled-back proposal could obtain contract rates for electricity that would enable the projects to be financed.

---

5. ***Conservation Law Foundation (CLF).***

Intervenor Conservation Law Foundation (CLF) stated a neutral position in respect the proposed Redington Wind Farm (RWF). CLF submitted testimony and evidence asserting that the valuable natural resources of Maine are at risk from climate change and that development of renewable energy sources is a necessary part of efforts to prevent that change. CLF linked combustion of fossil fuels for electricity generation with greenhouse gas emissions that contribute to global climate change, as well as various other pollutants that have a negative impact on human health and the environment. CLF argued that production of electricity by windpower would displace some production by fossil fuels and result in a reduction of the associated emissions.

CLF argued that greenhouse gases, including carbon dioxide (CO_2), are regulated pollutants in the state of Maine, as evidenced by the greenhouse gas reduction goals in 38 M.R.S.A. Chapter 3-A and the Maine Department of Environmental

Protection's regulations for motor vehicle emissions. CLF stated that windpower is the most promising technology for reducing CO_2 emissions because other options such as clean coal, CO_2 injection, and nuclear power have very limited feasibility in Maine while the state contains plentiful wind resources.

Colin High, PhD, of Resource Systems Group, Inc., presented expert testimony on behalf of CLF. Dr. High asserted that windpower displaces electrical generation from fossil fuel combustion because windpower facilities have much lower operating costs. Dr. High argued that there are many incentive programs for renewable energy, and that availability of Renewal Portfolio Standard (RPS) credits in Maine is not a limiting factor on construction of renewable energy facilities. Dr. High also asserted that CO_2 caps established by the Regional Greenhouse Gas Initiative will increase demand for electrical generation that does not produce CO_2 because fossil fuel-fired power generating facilities can only reduce their CO_2 emissions by reducing electrical production. Electrical generators burning fossil fuels will seek to purchase the CO_2 allowances available from zero-emission electrical generators, thus creating a market incentive for development of facilities such as the Redington Wind Farm.

---

6. ***Friends of the Western Mountains (FWM).***

The FWM submitted testimony in opposition to the Redington Wind Farm (RWF). FWM argued that the petitioner failed to: (a) provide sufficient information regarding local economic impacts of the project; (b) demonstrate that the project would fit harmoniously into the existing natural environment; (c) show that the project would not have an undue adverse impact on existing uses and resources; and (d) demonstrate a need for the project.

FWM questioned how many, if any, of the jobs created by the project and its construction would be filled by local residents, and asserted that the petitioner would pay an inappropriately low amount for property taxes. FWM further objected to the project based on its visual impact and concern that it would result in a decline in tourism and recreation in the area. FWM also asserted that the project will provide little economic benefit to the state of Maine because the largest portion of the capital investment will be made in equipment purchased from outside the state. Additionally, FWM raised a concern about icing on the turbine blades, questioning if it would cause shut-downs and also present a safety hazard.

Expert witness Thomas Hewson noted that Maine is a net exporter of electricity and that Maine's Renewable Portfolio Standard (RPS) has already been exceeded. He asserted that the RWF could displace other renewable energy producers such as hydro projects and biomass in competition for RPS credits and that, based on the output estimates provided by the applicant, the RWF would consume the majority of the transmission capacity for windpower to the exclusion of other future projects. In contrast, Hewson also asserted that the capacity factor calculated by the petitioner is unusually high and that, upon application of more typical capacity factors, the output

of the RWF would be significantly lower. Finally, Hewson argued that carbon dioxide is not a regulated air pollutant in Maine.

Comments from five members of the FWM living in the Rangeley area were submitted with the testimony, citing the visual impact of the turbines and the associated adverse impact they believe the RWF will have on tourism, recreation and property values in the area.

---

7. *TransCanada.*

Intervenor TransCanada, also a competitor preparing to propose a windpower project in Western Maine (Kibby Twp.), took a neutral position in respect to the proposed Redington Wind Farm (RWF). TransCanada argued that consideration by the Commission of transmission capacity and congestion went beyond the responsibilities of the Commission and that it was inappropriate for the Commission to require the petitioner to demonstrate that sufficient transmission capacity existed to accommodate its proposed output. TransCanada's request for an evidentiary ruling by the Commission in this regard was denied. In its testimony, TransCanada explained the mechanisms of the Federal Energy Regulatory Commission (FERC), the Maine Public Utilities Commission (PUC), and the New England Independent System Operator (ISO-NE) for evaluating and addressing transmission congestion.

TransCanada conceded that the "Section 215" line, which would serve RWF, as well as existing biomass and hydropower generators, and potentially TransCanada's Kibby Project, would not have sufficient capacity for full generation by all the generators even after re-rating. TransCanada explained that during periods of congestion, transmission capacity would be allocated by ISO-NE on an hour-by-hour basis through a bidding process that gives the lowest bidders first access. This process favors low cost producers like wind and hydropower generators over natural gas-fired plants. TransCanada also noted that PUC and FERC rules encouraging the relief of transmission congestion and development of new renewable generation is likely to result in development of additional transmission capacity.

---

8. *Independent Energy Producers of Maine, the Maine Energy Investment Corporation, Ed Holt & Associates, The Coalition for Reducing Dependence on Foreign Oil, and Maine Interfaith Power and Light.*

Intervenors Independent Energy Producers of Maine (IEPM), Maine Interfaith Power & Light (MIPL), Maine Energy Investment Corporation (MEIC) and Ed Holt & Associates, Inc. were consolidated as a group, and testified in support of the proposed Redington Wind Farm (RWF). The group testified that state, regional, and federal energy policies clearly demonstrate the need for renewable power projects such as the RWF. The group provided evidence such as the State's goal for new renewable capacity resources in the 2006 "*Act to Enhance Maine's Energy Independence and*

Security"; the 2004 "*Maine Wind Energy Act*"; the Renewable Portfolio Standard (RPS) requirements established in the 1997 Restructuring Act; the prioritization of windpower in the Department of Environmental Protection's Climate Action Plan; and the Commission's Findings of Fact and Decision in the matter of Kenetech Windpower (Zoning Petition ZP 536). The group also asserted there is significant market demand for renewable energy and RPS credits in the New England region that is not fulfilled by current renewable energy sources in Maine. The group disputed the FWM's assertion that additional electrical capacity is unnecessary and submitted a letter from the Senior Vice President and Chief Operating Officer of ISO-NE indicating that organization's concern that electricity supply shortages could occur in the region as early as 2007.

IEPM testified that the proposed RWF location is appropriate because wind resources in fields and coastal areas remain un-quantified, multiple wind farms would be necessary to provide benefits to the entire state, and few other viable mountainous locations are proximate to transmission lines. Ed Holt cited numerous studies of property values and tourism in other locations with wind farms that indicated a positive impact, as opposed to the negative impact forecast by other Intervenors. MEIC asserted that the long-term fixed price contracts offered by RWF through Constellation Energy will provide a lower cost, clean energy alternative to consumers. MIPL and MEIC asserted that the RWF would prevent significant amounts of emissions, including mercury, which impact Bicknell's Thrush, other wildlife and human health.

---

9. ***Western Mountains Foundation (WMF).***

The WMF expressed conditional opposition to the proposed Redington Wind Farm (RWF) when it requested Intervenor status because it objected to the placement of several of the turbines on Black Nubble that potentially could interfere with its plans for a trail across the project parcels. However, WMF expressed support for the RWF in its prefiled and oral testimony, stating that the petitioner had agreed in concept to provide permanent access across the Redington and Black Nubble parcels for a cross-country ski and hiking trail. WMF believes its proposed trail would provide a unique experience for hikers and skiers to observe a wind farm first-hand, and that many trail users would find a wind farm of interest. Finally, WMF stated it "appreciated the petitioner's willingness to provide multiple use opportunities within its project boundaries". Because an easement has not yet been completed, WMF stated it may continue to object to the placement of one or two of the turbines on Black Nubble.

---

10. ***James F. Palmer, LURC expert witness.***

Expert witness James F. Palmer reviewed the Visual Assessment section of the petition and prepared a report for the Commission organized around the LURC and

MDEP scenic impact standards. The report was submitted as prefiled testimony (see Finding of Fact #80). Dr. Palmer offered the following comments:

A. No alternative sites were included in the petitioner's visual assessment. This makes it impossible to tell if this is the best site, or if other arrangements on the site would have significantly less impact.
B. When viewed at sufficient distance, the RWF would not interrupt or block views. At a closer proximity the RWF would be prominent in the landscape because of scale.
C. An effective decommissioning plan for the RWF should be developed.
D. The color, form, and scale of the RWF would contrast with the surrounding landscape.
E. Contrasting lines are avoided by the placement of the turbines along the ridgelines, and by uneven spacing.
F. Although each would not be seen in proximity to the other, the RWF would be comparable in scale to the Saddleback and Sugarloaf ski resorts.
G. Typical distance zones used by the USDA Forest Service[10] are difficult to apply to wind turbines because of their scale.
H. The petitioner's visual assessment assumed very good atmospheric conditions when the turbines would be the most visible. Because of the towers' and blades' narrow width, at approximately 8.5 miles the wind farm will not be easily recognizable or evident, regardless of height, based on the limitations of visual acuity.
I. Both hikers and skiers value panoramic views. However, the effect of the view of the RWF on recreational experience is not easily described and not uniform.
J. The intercept survey used by the petitioner is a standard practice for sampling trail users and was done appropriately.
K. The scenic impacts to the Bigelow Mountain National Natural Landmark (NNL) should not be important since NNLs are designated for biological or geographic significance, not for scenic value. NNLs are not National Parks.
L. Filtered views of the RWF along the AT will not likely be particularly noticeable. The open views from high points are more of a consideration when assessing visual impact, but it is difficult to determine the nature of the hikers' appreciation of landscape features. If a hiker did not prefer the view of the RWF, he/she could take in the view in the other direction.

The remaining question for the Commission is whether the wind farm can be considered to be compatible with the surrounding landscape.

Post-hearing comments. After the public hearing, Dr. Palmer commented that the approach used by the NPS is one used to classify their land, and does not necessarily apply to private lands within LURC's jurisdiction because management values and goals may be different. In regard to the Appalachian Trail, NPS agreed they do not

[10] Foreground: 300 feet to ½ mile; middle-ground: ½ mile to 4 miles; background: more than 4 miles (USDA Forest Service).

own, have easements on, or otherwise control the land proposed for rezoning, and are relying on a compelling story, not on a legal condition. Mr. Palmer noted that it does not seem reasonable for the NPS to control the visual quality 10 miles on either side of the trail, even in the most scenic stretches. In regard to the visual impact of clear-cuts, in the White Mountains the greatest impact is when clear cutting is first introduced, decreasing with additional cuts. Finally, two studies of the economic impact of wind farms due to aesthetic changes, not due to the generation of electricity, were offered as background information. A potential loss of tourism revenue was implicated, but no loss to real estate values.

11. With the exception of the testimony and comments submitted by LURC expert witness James Palmer, the post-hearing comments submitted by State agencies are included under Review Comments, in Findings of Fact #57, #58, #60, and #61.

APPENDIX B: REVIEW CRITERIA

Comprehensive Land Use Plan (CLUP, 1997)

1. *Introduction (p.1).* While the more undeveloped portion of the jurisdiction is often referred to as wilderness by recreationists or those promoting recreation in the jurisdiction, this area is not wilderness by strict definition. To visitors, much of this area may seem like wilderness compared to most of the rest of the Northeast. For those living or working in or near the mainland portion of the jurisdiction, however, logging roads and active timber harvesting clearly identify the region as a managed forest important to the forest industry and segments of the recreation industry in the state.

2. *Natural Resources (Chapter 3).*

   A. *Air resources (p. 26).* Most issues associated with air resources revolve around uses of air (principally emission of air pollutants) and their effects on other valued resources and ecosystems. There are no significant issues regarding air resources that are within the Commission's realm of authority. Nevertheless, the Commission recognizes the importance of understanding and tracking the effects of air pollution on other valued resources, such as lakes and forests.

   B. *Energy resources (p. 40 & 41).*
   Windpower is the subject of considerable interest in Maine. Maine's wind resource is considerable, and much of it occurs along high mountaintops and ridgelines within the jurisdiction. These winds have the potential to power wind energy technologies that appear to compete with more traditional energy sources.
   The Commission on Comprehensive Energy Planning, directed by the Legislature to make recommendations for a state energy policy, completed its work in 1992. This commission noted that the state's energy policy should address the cost, reliability, environmental impact, and economic impact of energy projects. It stated that the goal of the state's energy policy should be to meet the state's energy needs with reliable energy supplies at the lowest possible cost, while at the same time ensuring that energy production is consistent with Maine's goals for a healthy environment and a vibrant economy. The Land Use Regulation Commission supports this goal and will try to advance it in its review of potential energy projects.

   C. *Mountain resources (p 58-59).*
   While many of the jurisdiction's mountain areas have excellent wind energy resources, wind turbines and associated infrastructure have the potential to compromise the values the P-MA zone is designed to protect. Proposed windpower sites are most appropriately rezoned to the Planned Development (D-PD) Subdistrict, and a number of issues deserve particular attention during the rezoning and site development process. They include:

- Visual impacts. Turbines and power lines sited on mountaintops and ridgelines have the potential to be visible from long distances away.
- Soils impacts. Many soils in mountainous areas are extremely sensitive to disturbance. Construction of access roads on steep slopes is probably the biggest potential threat.
- Wildlife impacts. Birds flying into turbine blades is a major concern.
- Technical feasibility. Large-scale windpower generation is an untested technology in harsh climates such as Maine's.

In light of the limited mountain resources and their value, it is unlikely that all such areas will be considered suitable for rezoning and associated development by the Commission. The Commission has also determined that off-site measures may not be an appropriate means of mitigating adverse impacts identified for particular proposals.

D. *Recreation resources (p. 61).* The Appalachian Trail in Maine stretches from Mount success on the new Hampshire border to Mount Katahdin. Of the 281 miles of the Appalachian Trail in Maine, almost all are located in the jurisdiction. The National Park Service owns about 30,000 acres which protects 180 miles of the trail. The remaining 100 miles pass through State-owned lands.

3. *Development (Chapter 4, p. 97*). The Commission has a dual mandate with respect to conservation and development in the jurisdiction. It must reconcile the need to protect the natural environment and other important values from uses that cause degradation with the need for traditional, resource-based uses and reasonable new economic growth and development.

4. *Development (Chapter 4, p. 114).* The CLUP states four principal values that define the jurisdiction's distinctive character:

A. The economic value of the jurisdiction for fiber and food production, particularly the tradition of a working forest, largely on private lands. This value is based primarily on maintenance of the forest resource and the economic health of forest products industry.
B. Diverse and abundant recreational opportunities, particularly for primitive pursuits.
C. Diverse, abundant and unique high-value natural resources and features, including lakes, rivers and other water resources, ecological values, scenic and cultural resources, coastal islands, and mountain areas and other geologic resources.
D. Natural character values, which include the uniqueness of a vast forested area that is largely undeveloped and remote from population centers.

5. *Development (Chapter 4, p. 131), Siting of Unwanted Land Uses and New Technologies.*

"In the mid-1990's, there has been considerable interest in the jurisdiction as a location for wind-generated electricity. While the Commission recognizes that windpower projects must be located where the wind resource exists, they have potentially significant on-site impacts due to their high elevation location and equally significant potential to adversely affect the jurisdiction's principle values."

6. *Goals and Policies for the Future (Chapter 5).* The Commission's broad goals (p. 134):

A. Support and promote the management of all the resources, based on the principles of sound planning and multiple use, to enhance the living and working conditions of the people of Maine, to ensure the separation of incompatible uses, and to ensure the continued availability of outstanding quality water, air, forest, wildlife and other natural resource values of the jurisdiction.
B. Conserve, protect and enhance the natural resources of the jurisdiction primarily for fiber and food production, non-intensive outdoor recreation and fisheries and wildlife habitat.
C. Maintain the natural character of certain areas within the jurisdiction having significant natural values and primitive recreation opportunities.

7. *Goals and Policies for the Future (Chapter 5).* The goals and policies for Natural Resources (pp. 135 to 140):

A. *Air resources*.
(1) Goal: Protect and enhance the quality of air resources throughout the jurisdiction.
(2) Policies:
(a) Require compliance with all state and federal air quality standards; require compliance with more stringent standards where necessary to preserve the air quality or unique values of identified sensitive areas, or to improve the air quality of identified non-attainment areas.
(b) Encourage state, federal and international initiatives directed at reducing emissions of air pollutants.

B. *Energy resources.*
(1) Goal: Provide for the environmentally sound and socially beneficial utilization of indigenous energy resources where there are not overriding, conflicting public values which require protection.
(2) Policies:
(a) Encourage energy conservation and diversification and the use of indigenous renewable resources to increase the state's energy self-sufficiency.
(b) 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.

(c) Permit new energy developments where their need to the people of Maine has been demonstrated and they are sited, constructed and landscaped to minimize intrusion on natural and human resources.

(d) Allow new or emerging energy technologies which do not have an undue adverse impact on existing uses and natural resources.

C. *Forest resources.*

(1) Goal: Conserve, protect and enhance the forest resources which are essential to the economy of the state as well as to the jurisdiction.

(2) Policy: Discourage development that will interfere unreasonably with continued timber and wood fiber production, as well as primitive outdoor recreation, biodiversity, and remoteness, and support uses that are compatible with these values.

D. *Mountain resources.*

(1) Goal: Conserve and protect the values of high mountain areas from undue adverse impacts.

(2) Policy: Regulate high mountain areas to preserve the natural equilibrium of vegetation, geology, slope, soil, and climate, to reduce danger to public health and safety posed by unstable mountain areas, to protect water quality, and to preserve scenic values, vegetative communities, and low-impact recreational opportunities.

E. *Special natural areas.*

(1) Goal: Protect and enhance identified features and areas of natural significance.

(2) Policy: Identify and protect natural areas that possess unique physical features, or which serve as habitat for rare, threatened or endangered species or representative plant communities.

F. *Wetland resources.*

(1) Goal: Conserve and protect the aesthetic, ecological, recreational, scientific, cultural, and economic values of wetland resources.

(2) Policies:

(a) Ensure that development projects in wetlands (in this order) avoid, minimize, restore, reduce or eliminate over time and/or compensate for functional wetland losses.

G. *Wildlife and fisheries resources.*

(1) Goal: Conserve and protect the aesthetic, ecological, recreation, scientific, cultural, and economic values of wildlife and fisheries resources.

(2) Policies:

(a) Protect wildlife habitat in a fashion which is balanced and reasonably considers the management needs and economic constraints of landowners.

H. *Scenic resources.*

(1) Goal: Protect scenic character and natural values by fitting proposed land use activities harmoniously into the natural environment and by minimizing adverse aesthetic effects on existing uses, scenic beauty, and natural and cultural resources.

(2) Policy: Encourage concentrated patterns of growth to minimize impacts on natural values and scenic character.

8. Development goals and policies (Chapter 5) (pp. 140 to 142).

A. *Location of development.*

(1) Goal: Guide the location of new development in order to protect and conserve forest, recreational, plant or animal habitat and other natural resources, to ensure the compatibility of land uses with one another and to allow for a reasonable range of development opportunities important to the people of Maine.

(2) Policies:

(a) Provide for a sustainable pattern of development consistent with historical patterns which directs development to suitable areas and safeguards the principal values of the jurisdiction, including a working forest, integrity of natural resources, and remoteness.

(b) In areas which are not appropriate as new development centers, allow for (i) planned developments which depend on a particular natural feature, subject to site plan review, and (ii) other development, subject to concept plan review.

B. *Economic development.*

(1) Goal: Balance the economic benefit that Maine people derive from the natural resource-based industries of the Commission's jurisdiction, especially the maintenance and creation of quality jobs, with protecting the environmental quality and special values of this area.

(2) Policies:

(a) Encourage those forest and recreation industries and other resource-based enterprises which further the jurisdiction's tradition of multiple use without diminishing its principal values.

(b) Allow new or emerging technologies, but limit the scale or application of these technologies where necessary to allow time for the Commission to evaluate the technology and its impacts.

C. *Site review.*

(1) Goal: Assure that development fits harmoniously into the existing natural environment.

(2) Policy: Require that provision be made for fitting development harmoniously into the existing natural environment, including requiring the use of buffers, building setbacks, and landscaping to minimize the impacts of land use activities upon one another and to maintain the scenic quality of shorelines and roadways.

D. *Infrastructure.*
(1) Goal: Ensure that infrastructure improvements are well planned and do not have an adverse impact on the jurisdiction's principal values.
(2) Policies:
(a) Require that communication towers be dismantled and removed from the site when such towers are unused for an extended period of time.

Statute

9. Pursuant to Section 685,A,8-A of the Commission's statute, a land use district boundary may not be adopted or amended unless there is substantial evidence that:

A. The proposed land use district is consistent with the standards for district boundaries in effect at the time, the comprehensive land use plan and the purpose, intent and provisions of this chapter; and
B. The proposed land use district satisfies a demonstrated need in the community or area and has no undue adverse impact on existing uses or resources, or a new district designation is more appropriate for the protection and management of existing uses and resources within the affected area.

10. Pursuant to Section 685,B(4) of the Commission's statute, the Commission shall approve no application, unless:

A. Adequate technical and financial provision has been made for complying with the requirements of the State's air and water pollution control and other environmental laws, and those standards and regulations adopted with respect thereto, including without limitation the minimum lot size laws, sections 4807 to 4807-G, the site location of development laws, Title 38, sections 481 to 490, and the natural resource protection laws, Title 38, sections 480-A to 480-Z, and adequate provision has been made for solid waste and sewage disposal, for controlling of offensive odors and for the securing and maintenance of sufficient healthful water supplies;

B. Adequate provision has been made for loading, parking and circulation of land, air and water traffic, in, on and from the site, and for assurance that the proposal will not cause congestion or unsafe conditions with respect to existing or proposed transportation arteries or methods;

C. Adequate provision has been made for fitting the proposal harmoniously into the existing natural environment in order to assure there will be no undue adverse effect on existing uses, scenic character and natural and historic resources in the area likely to be affected by the proposal. In making a determination under this paragraph regarding development to facilitate withdrawal of groundwater, the Commission shall consider the effects of the proposed withdrawal on waters of

the State, as defined by Title 38, section 361-A, subsection 7; water-related natural resources; and existing uses, including, but not limited to, public or private wells, within the anticipated zone of contribution to the withdrawal. In making findings under this paragraph, the Commission shall consider both the direct effects of the proposed withdrawal and its effects in combination with existing water withdrawals;

D. The proposal will not cause unreasonable soil erosion or reduction in the capacity of the land to absorb and hold water and suitable soils are available for a sewage disposal system if sewage is to be disposed on-site; and

E. The proposal is otherwise in conformance with this chapter and the regulations, standards and plans adopted pursuant thereto.

The burden is upon the applicant to demonstrate by substantial evidence that the criteria for approval are satisfied, and that the public's health, safety and general welfare will be adequately protected. The Commission shall permit the applicant to provide evidence on the economic benefits of the proposal as well as the impact of the proposal on energy resources.

Section 10.21,G of the Commission's Land Use Districts and Standards

11. Pursuant to Section 10.21,G of the Commission's Land Use Districts and Standards,

A. Section 10.21,G,2,b: A D-PD Subdistrict proposed for predominantly commercial and/or industrial land uses shall include at least 50 contiguous acres and, except wind energy generation facilities, shall contain a minimum of 30,000 square feet of gross building floor area.

B. Section 10.21,G,2: In any of the above cases, no development, other than access roads and utility lines shall be less than 400 feet from any property line. (This dimension may be increased or decreased, at the Commission's discretion, provided good cause can be shown.) Furthermore, the project shall be reasonably self-contained and self-sufficient and to the extent practicable provide for its own water and sewage services, road maintenance, fire protection, solid waste disposal and police security.

C. Section 10.21,G,8: The Preliminary Development Plan shall include: Evidence that the proposal conforms with the Commission's Comprehensive Land Use Plan and the purpose and description of a Planned Development as contained herein; evidence showing that the permit criteria set forth in 12 M.R.S.A. §685-B(4) will be satisfied; and the submission of various written and illustrative documents, as described hereinafter. Prior to any decision relative to such application, the staff shall make known its findings and recommendations, in writing, to the Commission and a public hearing shall be held in accordance with Chapter 5 of the Commission's Rules and Regulations.

The following items are required to be submitted with any Preliminary Development Plan application:

Written Statements

(1) A legal description of the property boundaries proposed for redistricting, including a statement of present and proposed ownership.

(2) A statement of the objectives to be achieved by locating the development in its proposed location distant from existing patterns of development. As it is a general policy of the Commission to encourage new development to locate with or adjacent to existing development, the rationale for promoting development away from such locations must be well documented. The statement should describe why the site is considered the best reasonably available for the proposed use(s). The fact that the applicant owns or leases the property shall not, of itself, be sufficient evidence to satisfy this last requirement.

(3) A reasonably complete development schedule and construction program that indicates when the project and stages thereof will begin and be completed. The schedule is to specify what percentage of the total project is represented by each stage and what buildings, floor areas and land areas are included in each such stage.

(4) A statement of the applicant's intentions with regard to future selling, leasing or subdividing of all or portions of the project. The statement should describe the type of covenants, restrictions or conditions that are proposed to be imposed upon buyers, lessees or tenants of the property.

(5) Statements to satisfy the Commission that the project is realistic, and can be financed and completed. Such statements shall demonstrate that the applicant has the financial resources and support to achieve the proposed development and that a sufficient market exists for the goods and/or services the development will provide.

(6) A statement of the environmental impact of the proposed development which sets forth the reasonably foreseeable adverse effects and measures to be taken by the applicant to minimize such effects.

(7) A general statement that indicates how the natural resources of the area will be managed and protected so as to reasonably assure that those resources currently designated within protection subdistricts will receive protection that is substantially equivalent to that under the original subdistrict designation.

Maps

(8) A location map (drawn on a USGS topographic map base or Commission Land Use Guidance Map) that indicates the area for which a D-PD Subdistrict designation is sought. This map should show all existing subdistricts.

(9) A map showing existing site conditions including contours at 10 foot intervals, water courses, unique natural conditions, forest cover, swamps, lakes, ponds, existing buildings, road boundaries, property lines and names of adjoining property owners, scenic locations and other prominent topographical or environmental features.

(10) A soils map of at least medium intensity that covers those portions of the site where any development is proposed. The description should use the soil group designations utilized in the Subsurface Waste Water Disposal Rules or the USDA Soil Series names.

(11) A site plan that shows the approximate location and size of all existing and proposed buildings, structures and other improvements, including roads, bridges, beaches, dumps, wells, sewage disposal facilities, storm drainage, cut and fill operations and general landscape planting. The plan should show the approximate proposed lot lines, the location of open spaces, parks, recreational areas, parking areas, service and loading areas and notations of what is proposed to be in common or private ownership.

(12) A map or description of the approximate type, size and location of proposed utility systems including waste disposal, water supply, and electric and telephone lines. Where a public water supply, and/or a central sewage collection and/or treatment system is proposed, evidence shall be required to show that these facilities will meet applicable governmental requirements and that the soils are suitable for such sewage disposal system.

D. Section 10.21,G,8,b: Within 90 days after the close of the record of the public hearing, the Commission may approve, approve with conditions, or deny the application in writing. In making this decision, the Commission shall ensure that the proposal:

(1) Conforms with the objectives and policies of the Comprehensive Land Use Plan and 12 M.R.S.A. §206-A;
(2) Incorporates, where the land proposed for inclusion in the D-PD subdistrict is in a protection subdistrict, a substantially equivalent level of environmental and resource protection as was afforded under such protection subdistrict;
(3) Utilizes the best reasonably available site for the proposed use;
(4) Conserves productive forest and/or farm land;
(5) Incorporates high quality site planning and design in accordance with accepted contemporary planning principles;
(6) Envisions a project that is reasonably self-sufficient in terms of necessary public services;
(7) Provides for safe and efficient traffic circulation; and
(8) Utilizes the best practical technology to reduce pollution, waste and energy consumption.

E. Section 10.21,G,8,c: Approval or Denial of Preliminary Development Plan

(1) If, after weighing all the evidence, the Commission approves the Preliminary Development Plan application, the D-PD Subdistrict shall be designated on

the official district map and recorded in accordance with the provisions of Section 10.04. Simultaneously with such approval, a preliminary development permit will be issued. The preliminary development permit may contain such reasonable conditions as the Commission deems appropriate and will specify the conditions for approval of the Final Development Plan. The terms of the preliminary development permit will be in writing and shall be deemed to be incorporated in the D-PD Subdistrict.

(2) Within a maximum of 18 months following a Commission decision to designate an area as a D-PD Subdistrict, the applicant shall file a Final Development Plan containing in detailed form the information required in Section 10.21,G,10 below. At its discretion, and for good cause shown, the Commission may extend the deadline for filing of the Final Development Plan.

(3) If the applicant fails for any reason to apply for final approval by submitting a Final Development Plan within the prescribed time, the D-PD Subdistrict designation shall be deemed to be revoked and the original subdistrict(s) shall again apply.

12. Section 10.22,A,1 of the Commission's Land Use Districts and Standards states: The purpose of the M-GN Subdistrict is to permit forestry and agricultural management activities to occur with minimal interference from unrelated development in areas where the Commission finds that the resource protection afforded by protection subdistricts is not required.

13. Section 10.22,A,3(30) of the Commission's Land Use Districts and Standards: Other structures, uses, or services which the Commission determines are consistent with the purposes of the subdistrict and of the Comprehensive Land Use Plan and are not detrimental to the resources or uses they protect, are allowed with a permit in an (M-GN) General Management Subdistrict.

14. Section 10.23,I,1 of the Commission's Land Use Districts and Standards: The purpose of the P-RR Subdistrict is to provide protection from development and intensive recreational uses to those areas that currently support, or have opportunities for, unusually significant primitive recreational activities. By doing so, the natural environment that is essential to the primitive recreational experience will be conserved.

15. Section 10.25 of the Commission's Land Use Districts and Standards

A. *Section 10.25,C: Technical and Financial Capacity*. The standards set forth below must be met for all subdivisions and commercial, industrial, and other non-residential development.

(1) The applicant shall retain qualified consultants, contractors and staff to design and construct proposed improvements, structures, and facilities in accordance with approved plans. In determining the applicant's technical ability, the Commission shall consider the size and scope of the proposed development,

the applicant's previous experience, the experience and training of the applicant's consultants and contractors, and the existence of violations or previous approvals granted to the applicant.

(2) The applicant shall have adequate financial resources to construct the proposed improvements, structures, and facilities and meet the criteria of all state and federal laws and the standards of these rules. In determining the applicant's financial capacity, the Commission shall consider the cost of the proposed subdivision or development, the amount and strength of commitment by the financing entity, and, when appropriate, evidence of sufficient resources available directly from the applicant to finance the subdivision or development.

B. *Section 10.25,E: Scenic Character, Natural and Historic Features.*

(1) *Scenic Character.*

(a) The design of proposed development shall take into account the scenic character of the surrounding area. Structures shall be located, designed and landscaped to reasonably minimize their visual impact on the surrounding area, particularly when viewed from existing roadways or shorelines.

(b) To the extent practicable, proposed structures and other visually intrusive development shall be placed in locations least likely to block or interrupt scenic views as seen from traveled ways, water bodies, or public property.

(c) If a site includes a ridge elevated above surrounding areas, the design of the development shall preserve the natural character of the ridgeline.

(2) *Natural Features.*

If any portion of a subdivision or commercial, industrial or other non-residential project site includes critically imperiled (S1) or imperiled (S2) natural communities or plant species, the applicant shall demonstrate that there will be no undue adverse impact on the community and species the site supports and indicate appropriate measures for the preservation of the values that qualify the site for such designation.

APPENDIX C

ZONING PETITION ZP 702
PRELIMINARY DEVELOPMENT PLAN
January 24, 2007

Land Uses Allowed Within the Redington Wind Farm (D-PD) Planned Development Subdistrict and Land Uses Associated With the Redington Wind Farm Not Located Within the (D-PD) Planned Development Subdistrict

On January 24, 2007 the Commission approved, with conditions, the Preliminary Development Plan ("Plan") and Zoning Petition ZP 702 for the Redington Wind Farm in Redington Township and Wyman Township, Franklin County. The Commission, under the provisions of Section 10.21,G of its Land Use Districts and Standards, may designate an area as a (D-PD) Planned Development Subdistrict to provide for large-scale, well planned developments, which are, or may be separate from existing developed areas, provided they can be shown to be of high quality and not detrimental to other values established in the Commission's Comprehensive Land Use Plan, and provided they depend on a particular natural feature or location which is available at the proposed site.

All uses allowed by permit within this Plan require approval under a Final Development Plan, in accordance with Section 10.21,G,10 of the Commission's Land Use Districts and Standards. Only those uses and structures approved in the Final Development Plan may be allowed in the D-PD Subdistrict.

1. Purpose

The purpose of the Redington Wind Farm (D-PD) Planned Development Subdistrict is to establish and implement a comprehensive program for a 30 turbine wind farm that provides for a well-planned development and the management and protection of the natural resources of the area. The D-PD Subdistrict shall not provide the basis for subsequent redistricting of the area to another development subdistrict, nor shall it serve to satisfy those requirements for redistricting surrounding areas to other development subdistricts.

2. Description

This Preliminary Development Plan applies to the Redington Wind Farm (D-PD) Planned Development Subdistrict, which encompasses 1,004 acres located in two non-contiguous parcels on Redington Pond Range (517 acres) and Black Nubble Mountain (487 acres) in Redington Township, Franklin County. Activities and structures for the infrastructure and support services associated with the Redington Wind Farm located in Redington

Township and Wyman Township, but not within the two parcels designated as D-PD Subdistrict, are also included in the Plan.

3. Land Uses

Sections A and B specify the activities that are allowed in the D-PD Subdistrict without a permit, or without a permit subject to the Commission's Land Use Districts and Standards. Section C specifies the land uses and structures that will be allowed in the Redington Wind Farm (D-PD) Planned Development Subdistrict upon Final Development Plan approval. Section D specifies the infrastructure and other uses and structures associated with those activities allowed in the D-PD Subdistrict, but located outside the subdistrict boundaries, upon Final Development Plan approval.

A. Uses allowed without a permit within the (D-PD) Planned Development Subdistrict

The following uses are granted Preliminary Development Plan approval in the Redington Wind Farm (D-PD) Planned Development Subdistrict. Such uses shall be allowed without a permit.

(1) Emergency operations for wind farm personnel and contractors during construction, operation, and maintenance; and emergency operations conducted for public health, safety or general welfare;
(2) Forest management activities conducted or authorized by Maine Mountain Power, except for timber harvesting and land management roads;
(3) Motorized vehicular traffic on roads and trails, and snowmobiling, as authorized by Maine Mountain Power;
(4) Primitive recreational uses authorized by Maine Mountain Power;
(5) Surveying and other resource analysis authorized by Maine Mountain Power, including wind resource studies; and
(6) Wildlife and fisheries management activities authorized by Maine Mountain Power, or conducted by state and federal wildlife resource agencies.

B. Uses allowed without a permit subject to standards within the (D-PD) Planned Development Subdistrict

The following uses and structures are granted Preliminary Development Plan approval in the Redington Wind Farm (D-PD) Planned Development Subdistrict. Such uses and structures shall be allowed without a permit, subject to the applicable standards set forth in Sections 10.25 to 10.27 of the Commission's Land Use Districts and Standards, except as specified herein.

(1) Level A mineral exploration activities, including access ways;
(2) Level A road projects: Maintenance of access and ridgeline roads after construction of the wind farm; and

(3) Signs, as listed in Section 10.27,J,1 of the Commission's Land Use Districts and Standards: Signs along the access and ridgeline roads to direct construction crews, maintenance and operations personnel, and emergency personnel, and to warn of potential icing events; and
(4) Timber harvesting and land management roads conducted or authorized by Maine Mountain Power after construction of the wind farm;

C. Uses requiring a permit within the (D-PD) Planned Development Subdistrict

The following uses and structures are granted Preliminary Development Plan approval, and are allowed within the Redington Wind Farm (D-PD) Planned Development Subdistrict upon application for, and approval by the Commission, a Final Development Plan, pursuant to Section 10.21,G,10 of the Commission's Land Use Districts and Standards. Such uses and structures shall be subject to the applicable requirements set forth in Sections 10.25 to 10.27 of the Commission's Land Use Districts and Standards, except as specified herein.

(1) Alteration of up to 4,300 square feet of P-WL2 and P-WL3 Wetland Protection Subdistricts;
(2) Blasting as needed for the turbine foundations, roads, and transmission lines;
(3) Clearing for the roads, turbines, transmission lines, and meteorological towers:
    (a) The average width of the cleared area for the ridgeline road must be no more than 90 feet;
    (b) The post-construction road width must be no more than 12 feet, other than as required for a turning radius, unless otherwise approved by the Commission;
    (c) The clearing for the turbine and crane pads must be limited to the size of the areas specified for the pads below under "Filling and Grading". The crane pads and turbine pads must be allowed to revegetate after construction;
    (d) The corridor cleared for the above-ground transmission line must be no wider than 75 feet, except as needed for areas for turning structures. The clearing must not remove the shrub or herbaceous layer, except within the access way areas;
    (e) The areas cleared to install the underground transmission lines where the lines are not within the roadway, must be no wider than 12 feet, and must be allowed to revegetate after construction, except for staging and turn-around areas intermittently located along the corridor; and
    (f) The total area cleared to install the two meteorological towers must be no more than 1.4 acres, the clearing must not remove the shrub or herbaceous layer, and the vegetation must be allowed to regenerate after construction;
(4) Filling and grading:
    (a) Thirty (30) turbine pads (160 feet by 50 feet each);
    (b) Three (3) temporary crane pads (25 feet by 240 feet each);
    (c) A 12 foot wide corridor for installation of underground transmission line not within the roadway;

(d) As needed for the roads and under-ground transmission lines and communication system within the roadway; and
(e) To install the meteorological towers;

(5) Level B road projects for repair and maintenance of turbines, and roads where the 12 foot wide post-construction roads would be temporarily expanded to allow access by heavy equipment [Note: In the event that the post-construction access roads would need to be temporarily expanded, prior to undertaking the work, the petitioner shall submit a proposal to the Commission for review and approval];

(6) Level C road projects:
(a) 8.5 miles of new ridgeline roads on Redington Pond Range and Black Nubble Mountain to connect the turbine sites;
(b) The traveled surface of the ridgeline roads would be 32 feet wide, plus shoulders, during construction, reduced to 12 feet wide after construction. The traveled surface of the access roads would be 12 feet to 20 feet wide during construction, reduced to 12 feet wide after construction;
(c) Eight (8) foot wide by 200 foot long wide-outs along portions of the narrowed areas of the ridgeline road every ½ mile;
(d) Temporary road construction along the permanent road routes;

(7) Lighting as approved by the Federal Aeronautics Administration on the turbines and if needed, on the meteorological reference towers;

(8) Meteorological reference towers: Two 80 meter tall (262 feet) wind measurement reference towers, which would be reduced to 60 meters tall (196 feet) after the turbines are calibrated. The towers would hold anemometers and wind vanes to measure wind speeds and direction;

(9) Transmission lines and communication system:
(a) Underground 34.5 kV electrical transmission collector and communication systems within the ridgeline roads or within the road shoulder;
(b) Underground lines to connect turbines #19 and #20;
(c) 1,500 feet of underground 34.5 kV transmission line on Black Nubble beyond the turbine strings;
(d) 700 feet of above-ground transmission line on Black Nubble beyond the turbine strings;

(10) Water crossings of minor flowing waters; and

(11) Thirty (30) wind turbines: Eighteen (18) wind turbines with foundations on Black Nubble Mountain, and twelve (12) wind turbines with foundations on Redington Pond Range. Each turbine tower would be 80 meters (262 feet) tall, with 44 meter long (144 foot) long rotor blades. The total height would be 410 feet when the rotor blade is extended directly upward.

D. Infrastructure and other uses and structures located outside the D-PD Subdistrict requiring a permit

The following activities and structures associated with proposed Redington Wind Farm are granted Preliminary Development Plan approval, and are subject to application, and approval by the Commission, of a Final Development Plan, pursuant

to Section 10.21,G,10 of the Commission's Land Use Districts and Standards. Except for road and transmission line crossings, designated wetland impacts, and other activities identified as occurring in (P-WL) Wetland Protection Subdistricts or (P-SL) Shoreland Protection Subdistricts, such uses and structures shall be located in the (M-GN) General Management Subdistrict. All uses shall be subject to the applicable requirements set forth in Sections 10.25 to 10.27 of the Commission's Land Use Districts and Standards. Activities not specifically listed are subject to the provisions of the Commission's Land Use Districts and Standards for the subdistrict in which the activity would occur.

(1) Alteration of the water table for production of concrete for turbine foundations, and dust control during construction;
(2) Alteration of up to 15,000 square feet of P-WL2 and P-WL3 wetlands for road construction; and alteration of streams (P-WL1 wetlands) for road crossings;
(3) Filling and grading not in conformance with the standards of Section 10.27,F of the Commission's Land Use Districts and Standards;
(4) Level A mineral exploration activities, including associated access ways, which are not in conformance with the standards of Section 10.27,C Commission's Land Use Districts and Standards;
(5) Level B mineral extraction for road construction and maintenance for the Redington Wind Farm;
(6) Level B road projects: Upgrades of existing roads to provide access to the Redington Wind Farm that meet the definition in Section 10.02(89) of the Commission's Land Use Districts and Standards;
(7) Level C road projects:
    (a) Approximately 3.2 miles of new access roads;
    (b) The traveled surface of the access roads would be 12 feet to 20 feet wide during construction, reduced to 12 feet wide after construction;
    (c) Eight (8) foot wide by 200 foot long wide-outs along the access roads every ½ mile during construction;
    (d) Water crossings proposed for the access roads; and
    (e) 0.8 miles of temporary access road;
(8) Maintenance facility: A 40 foot by 60 foot (2,400 square feet), one-story maintenance facility with parking lot, equipment storage area, office, and combine subsurface wastewater disposal system; and temporary lay-down area next to the maintenance facility;
(9) Mineral extraction operations:
    (a) Affecting an area less than 5 acres in size, and that are not in conformance with the standards of Section 10.27,C of the Commission's Land Use Districts and Standards;
    (b) Affecting an area between 5 acres and 30 acres, provided the un-reclaimed area is less than 15 acres; and
    (c) Structures essential to the extraction activity having a gross floor area of no more than 2,000 square feet;
(10) Portable mineral processing equipment;
(11) Structures devoted to the storage of sand or salt;

(12) Stump disposal areas affecting an area less than 2 acres in size;
(13) Temporary concrete batch plant;
(14) Temporary office and storage trailers;
(15) Truck or equipment storage;
(16) Utility facilities:
  (a) 3.8 miles of 34.5 kV transmission lines within 75 foot wide cleared corridors;
  (b) 4.5 miles of 115 kV transmission lines within a 150 foot wide cleared corridor, expect for the portion adjacent to the Boralex line which would be a 75 foot wide corridor;
  (c) 600 feet of underground 115 kV transmission line and the associated clearing, grading and filling to install the line; and
  (d) The Nash Stream substation within a 120 foot by 150 foot fenced in area, and a 0.1 mile extension of an existing access road.