APPENDIX F: AESTHETIC CONSIDERATIONS

Paul Gipe, writing in Wind Power in View[1], observes *"There may be no way to eliminate every objection to the appearance of wind turbines on the landscape. However, there is some consensus on how to minimize these objections…If we take clues from the experience in the United States and Europe, here is what we can do to reduce the objectionable aesthetic impacts of wind power."* The following section presents the principles outlined in Chapter 9: Aesthetic Guidelines for a Wind Power Future. The **bold type** are the guidelines adopted from Gipe. The narrative explains how RWF has been designed in keeping with these principles.

- **Provide visual order and uniformity. Use similar turbines and towers together.** The RWF will use one type of wind turbine to avoid a sense of visual disorder or clutter. All turbines will spin in the same direction. All will be painted the same color.

- **Provide distinct visual units.** Studies cited in Gipes book cite the need to arrange turbines in visually distinct groupings when placed in arrays. This is the case on RWF with two distinct arrays on adjacent mountains, separated by undeveloped mountaintop.

- **Use towers of consistent height.** All RWF towers will be 80 meters in height. All blades will be the same length (44 meters).

- **Limit the number of turbines per cluster.** This is a key element in providing distinct visual units. From most vantage points the wind farm will be perceived as

[1] Pasqualetti, Martin J., Paul Gipe, Robert W. Righter. Wind Power in View: Energy Landscapes in a Crowded World. Academic Press. San Diego. 2002.

two distinct groupings, with 12 turbines on Mount Redington and 18 on Black Nubble.

- **Use open spacing.** The turbines will be spaced a minimum of two rotor diameters apart (180 meters/590 feet) to take maximum advantage of the wind resource and minimize interference between adjoining turbines.

- **Keep them spinning. Remove non-operating wind turbines.** When turbines are turning, they are perceived as beneficial. When they are not moving, observers' level of acceptance is greatly diminished. See description of maintenance in Chapter ==.

- **Remove ancillary structures.** All accessory structures needed for the RWF (operations and maintenance buildings, transformers, storage sheds, etc.) will be located off the mountain.

- **Bury intraproject power lines.** All electrical connections between turbines will be buried under the road. There will be no above-ground conductors until the generated power leave the mountains in the 34.5 kV lines.

- **Harmonize ancillary structures.** The only other visible structures on top of the mountains will be the meteorological reference towers. These are very thin and open elements and will be virtually invisible beyond one mile. At 80 meters in height, they are also the same height as the towers used to support the wind turbines.

- **Avoid mounting telecom antennas.** EEC will not lease space on any project component to telecommunications companies to keep the towers as clean as possible.

- **Minimize earth moving and control erosion by avoiding steep slopes**. A considerable amount of study has gone into the route selection to avoid visually sensitive slopes, very steep topography, wetlands, and areas of ecological sensitivity. See Erosion and Sedimentation Control Report. and Basis of Design for the Roadway, by DeLuca-Hoffman Associates.

- **Minimize or eliminate roads. Use existing roads.** Existing timber haul roads will be used wherever possible to gain access to the project site. Temporary access roads will be eliminated and revegetated when they are no longer needed. See Basis of Design for the Roadway for a full discussion regarding the approach used to minimize road construction and disturbance to the sensitive mountain terrain.

- **Minimize grading width**. As noted in Basis of Design for the Roadway the roads have been designed to the minimum width necessary to safely accommodate the vehicles that will transport the project components up the mountains.

- **Minimize staging areas and crane pads. Restore original contour and revegetate.** Following the installation of the turbines, the laydown areas at each site will be revegetated to restore the landscape and minimize contrasts in color and texture.

- **Avoid aircraft obstruction markings.** FAA minimum standards for a two-stage red slow-on slow-off lights will be used to minimize intrusion into the night sky. A total of nine lights will be used on the thirty turbines.

- **Douse security lights.** There will be no security lighting on the mountaintops.

- **Be unobtrusive. Avoid logos on nacelles.** Turbines will be clean and uncluttered, with no identifying logos on the nacelles or towers.

- **Choose color carefully.** Light gray is proposed as the best choice of color in this climate. The gray color will offer the least amount of contrast with the sky under typical atmospheric conditions.

- **Use proper proportions.** The tapered tower, aerodynamic nacelle, and curved blades have been designed as individual components in an aesthetic whole.

- **Maintain good housekeeping. Clean nacelles and towers.** See operations manual for a description of how the site will be managed and the facility maintained. The operations and maintenance facility will be out of public view.

- **Inform the public or provide public access.** Access roads will be available to the general public who wish to visit the RWF. The roads may be gated at certain times of the year (e.g.., mud season, icing events) to protect the stability of the roadbed and ensure the safety of the general public. See operations manual for policy on public access.

- **Limit tower height and turbine size**. The tower heights selected for RWF are appropriate for the scale of the surrounding mountains and valleys.

- **Avoid tower pedestals**. The base of the towers will be regarded to allow vegetation to grow up to the base, thus avoiding any unnecessary exposure of the concrete foundation.