



Martin Honigberg, Chairman  
NH Site Evaluation Committee  
21 South Fruit Street, Suite 10  
Concord, NH 03301

September 18, 2015

Dear Chairman Honigberg:

The Appalachian Mountain Club, Society for the Protection of New Hampshire Forests and Audubon Society of New Hampshire submit the following comments on the Site Evaluation Committee's proposed rules (Annotated Draft Final Proposal 8-27-15).

Our groups have been advocating for more specific criteria to guide the SEC decision-making process for many years. We have actively participated since 2006 in processes intended to provide further guidance to the public, applicants, and the Committee, in determining the potential effects of energy projects in New Hampshire. AMC and ASNH led the multi-stakeholder effort that developed the 2007 *Proposed Wind Power Siting Guidelines* that are posted on the SEC web site. We were deeply engaged in the development and passage of both SB 99 and SB 245, and have continued to invest significant effort in this rule-making process.

We appreciate the time and energy the Committee has committed to this rule-making. We also appreciate the consideration you have given to our many suggestions in various filings over the past months. We believe that the final product, with the further changes set forth in these comments, will improve both the Committee's process, and the understanding and participation of the public in the SEC's critical decision-making that will shape the character of our state for decades to come.

Our comments are presented using the current draft text of the proposed rules. Edits from the existing rules accepted by the SEC to date and shown in the Annotated Draft Final Proposal have been incorporated and are not shown. We include both our proposed modifications (strikethrough and underline) and a justification for our suggestions (italics).

Thank you for the opportunity to present these comments. Please feel free to contact me should you have any questions.

Sincerely,

Susan Arnold  
Appalachian Mountain Club

Will Abbott  
Society for the Protection of New Hampshire Forests

Carol Foss  
Audubon Society of New Hampshire

**Proposed changes to draft SEC rules (Annotated Draft Final Proposal 8-27-15)**  
**Appalachian Mountain Club, Society for the Protection of New Hampshire Forests and**  
**Audubon Society of New Hampshire**  
**September 18, 2015**

**PART Site 102 DEFINITIONS**

Site 102.19 “Fragmentation” means the loss of habitat that results from the division of relatively large, continuous habitats into smaller, more isolated remnants, including the full range of impacts from the initial perforation of continuous habitat by roads and other linear corridors through later stages of increasing isolation of habitat in discrete patches.

*The current definition only encompasses the final stages of fragmentation. It should be expanded to make clear that fragmentation is a process that begins with the initial perforation of continuous habitat by linear corridors. Under the current definition, it could be argued that the construction of a wind power project along a linear ridgeline does not constitute fragmentation since the previously continuous habitat on either side of the project corridor is not truly isolated. This is contrary to the accepted ecological understanding of fragmentation.*

*The University of Maine Cooperative Extension publication “Biodiversity in the Forests of Maine: Guidelines for Land Management” (Figure 14, page 108) provides an excellent illustration of the fragmentation process. (See [https://forest.umaine.edu/files/2011/07/biodiversity\\_forests\\_me.pdf](https://forest.umaine.edu/files/2011/07/biodiversity_forests_me.pdf).)*

New definition to be added as Site 102.24: “Migration corridors” means routes followed by fish or wildlife when traveling between seasonal habitats that are necessary to maintain flourishing fish and wildlife populations.

*This definition is needed to supplement our proposed addition to Site 301.14(e)(3).*

**PART Site 301 REQUIREMENTS FOR APPLICATIONS FOR CERTIFICATES**

**Site 301.02 Format of Application.**

(a) Paper copies of applications shall be prepared on standard 8 ½ x 11 inch sheets, and photosimulations and plans shall be folded to that size. Electronic copies of applications shall be submitted through electronic mail, on compact discs, or in an electronic file format compatible with the computer system of the commission, including details on how to appropriately view photosimulations on computer screens.

*Standard practice is to print photosimulations at larger sizes than 8 ½ x 11 for appropriate scale reasons – see 301.03(e)(7).*

*Viewing photosimulations on computer screens is fraught with challenges that can detract from their representation. Guidance should be provided to ensure that on-screen viewing is as consistent as possible on all platforms.*

**Site 301.03 Contents of Application.**

Site 301.03(c)(6) ~~Evidence that the applicant has a current right, or option or other legal right to acquire the right, to construct the facility on, over, or under the site, in the form of ownership, ground lease, easement, other contractual rights or interests, written license, or other permission from a federal, state, or local government agency, or through the simultaneous taking of other action that would~~

~~provide the applicant with a legal right of eminent domain to acquire control of the site for the purpose of constructing the facility thereon;~~ Evidence that the applicant has a current legal right, including contingent or conditional rights, to all land necessary to build, operate, and maintain the proposed project, accompanied by any and all necessary documentation to prove such legal access;

*We believe that the proposed language is unnecessarily complex and that our language provides a more concise statement of the required information. In addition, legal rights should be demonstrated to carry out all aspects of facility use throughout its life, not just its construction.*

Site 301.03(e)(7) A map showing the entire facility, including, in the case of an energy transmission pipeline, the corridor width for a new route or widening along an existing route and the location of each compressor station, pumping station, storage facility, and other ancillary facilities associated with the facility.

*Information on corridor width is required for energy transmission lines [proposed Site 301.03(g)(3)] but also needs to be included for energy transmission pipelines which may have similar corridor impacts that need to be evaluated.*

### **Site 301.05 Effects on Aesthetics.**

Site 301.05(b) The visual impact assessment shall contain the following components:

- (4) A computer-based visibility analysis based on the best publicly-available topographic and land cover data to determine the area and magnitude of potential visual impact, which, for proposed:
  - a. Wind energy systems shall extend to a minimum of a 10-mile radius from each wind turbine in the proposed facility;
  - b. Electric transmission lines longer than 1 mile shall extend to a ½10 mile radius ~~if located within any urbanized area; and~~
  - c. ~~Electric transmission lines longer than 1 mile shall extend to a 2 miles radius if located within any urban cluster~~Energy transmission corridors requiring the clearing of a new corridor shall extend to a 10 mile radius;
  - d. ~~Electric transmission lines longer than 1 mile shall extend to a 3 miles radius if located within a rural area where the line follows an existing transmission corridor;~~
  - e. ~~Electric transmission lines longer than 1 mile shall extend to a 5 miles radius if located within a rural where the line would be located in a new transmission corridor; and~~
  - f. ~~Electric transmission lines longer than 1 mile, an “urbanized area” and an “urban cluster” are as designated by the U.S. Census Bureau, and a “rural area” is any geographic area that is not located within either an urbanized area or an urban cluster as so designated;~~

*High-resolution LIDAR-based topographic data is likely to become increasingly available, which can allow for greater accuracy in topographic visibility analyses. Where this data is available its use should be required.*

*The VIA should include not only the area from which the facility would be visible but also the magnitude of the impact in different areas (i.e., the number of wind turbines or electric transmission towers that would be visible).*

*The SEC should have the option to consider impacts of wind power projects beyond 10 miles if conditions warrant. Turbine size is increasing dramatically, having gone from less than*

400 feet a few years ago to almost 600 feet today, and even taller towers are now commercially available. Turbines can be clearly visible beyond 10 miles, as is nighttime aircraft warning lighting. These increases in turbine size extend their visual impact range, and the SEC should not be limited by rule to 10 miles.

*It should be recognized that a 10 mile distance is conservative for analysis of the impacts of wind power projects; for example West Virginia requires the visual analysis to extend to 20 miles. The 2007 National Academy of Sciences report "Environmental Impacts of Wind-Energy Projects"<sup>1</sup> stated:*

*"The size of the area for analysis may vary from location to location depending on the particular geography of the area and on the size of the project being proposed. Modern wind turbines of 1.5-3 MW can be seen in the landscape from 20 miles away or more (barring topographic or vegetative screening), but as one moves away from the project itself, the turbines appear smaller and smaller, and occupy an increasingly small part of the overall view. The most significant impacts are likely to occur within 3 miles of the project, with impacts possible from sensitive viewing areas up to 8 miles of the project. At 10 miles away the project is less likely to result in significant impacts unless it is located in or can be seen from a particularly sensitive site or the project is in an area that might be considered a regional focal point. Thus, a 10-mile radius provides a good basis for analysis including viewshed mapping and field assessment for current turbines. In some landscapes a 15-mile radius may be preferred if highly sensitive viewpoints occur at these distances, the overall scale of the project warrants a broader assessment, or if more than one project is proposed in an area." [Italics added]*

*The NAS assessment was based on turbines currently in use at that time (i.e. less than 400 feet tall).*

*The 2011 Clean Energy States Alliance report "A Visual Impact Assessment Process for Wind Energy Projects"<sup>2</sup> stated, "Modern wind projects using 2.0+ MW turbines are easily visible at 15-20 miles' distance in clear weather conditions," while noting that 10 miles was a good guideline for analysis in northeastern regions.*

*Finally, the 2014 Scottish Natural Heritage report "Visual Representation of Wind Farms"<sup>3</sup> recommended significantly greater distances for analyzing wind power project visual impacts based on turbine height – 22 miles for turbines up to 426 feet, 25 miles for turbines up to 492 feet and 28 miles for turbines over 492 feet.*

*The variable transmission corridor visual distance limits as determined by land use type or in existing ROWs as contained in this draft is neither defensible nor supported by independent fact based studies. For example, a historic district in an urban area such as Strawberry Banke in Portsmouth could be highly impacted by a 160 foot tall tower that was 0.6 miles away, but as written an analysis would not be required. Similarly, newly added tower/poles with much greater heights that extend well above tree height in existing ROWs can result in*

---

<sup>1</sup> See <http://dels.nas.edu/Report/Environmental-Impacts-Wind-Energy-Projects/11935>.

<sup>2</sup> See <http://www.cesa.org/resource-library/resource/a-visual-impact-assessment-process-for-wind-energy-projects>.

<sup>3</sup> See <http://www.snh.org.uk/pdfs/publications/heritagemanagement/Visual%20representation%20of%20wind%20farm%20-%20version%202.1%20-%20December%202014.pdf>.

*dramatically different visual impact distances (e.g. see DOE's DEIS Northern Pass visual analysis that demonstrates this fact). Differences in topographic elevations between viewer and corridor have substantial impacts on visibility, regardless of land use. Also, other recent transmission project studies have analyzed visual impacts to considerably greater distances than proposed in the draft rules; the US DOE Northern Pass DEIS used a 10 mile distance, and the US NPS Susquehanna-Roseland project EIS used 20 miles. As stated in the Northern Pass DEIS, "Based on a review of past studies evaluating the visual presence of transmission structures, it was determined that 10 miles (16 km) is an appropriate threshold to consider (Driscoll et al. 1976a; Sullivan 2014a). Structures have the potential to be detected past 10 miles (16 km) by someone with a critical eye who was looking for them. However, 10 miles (16 km) is a more reasonable threshold for a casual observer with an interest in scenery." Transmission line or pipeline corridors can be noticeably visible as linear forest openings for even greater distances.*

- (6) Characterization of the potential visual impacts of the proposed facility, and of any visible plume that would emanate from the proposed facility, on identified scenic resources and a representative sample of private properties as high, medium, or low, based on consideration of the following factors:

*Photosimulations from a sample of private properties is required in subsection (7) so it is appropriate to also include them within this section.*

- (7) Photosimulations from representative key observation points, from other scenic resources for which the potential visual impacts are characterized as "high" pursuant to (6) above, and, to the extent feasible, from a sample of private property observation points within the area of potential visual impact, to illustrate the potential change in the landscape that would result from construction of the proposed facility and associated infrastructure, including land clearing and grading and road construction, and from any visible plume that would emanate from the proposed facility. Photographs used in the simulation shall be of high resolution and contrast, shall be taken at an equivalent focal length of 50 millimeters or digital equivalent that creates an angle of view that closely matches human visual perception, shall be taken with clear weather and at a time of day that provides the best clarity and contrast, and shall avoid if possible foreground clutter such as power poles, and represent the equivalent of what would be taken with a 75 millimeter focal length lens on a full frame 35 millimeter camera and Simulations shall be printed at high resolution at 15.3 inches by 10.2 inches or 390 millimeters by 260 millimeters. At least one set of photosimulations shall represent winter season conditions without the presence of foliage typical of other seasons. Global Position System (GPS) location points with an accuracy of at least 3 meters should be recorded for each simulation viewpoint to ensure repeatability.

*Our recommendations are drawn from a variety of sources that present standards for visual simulations, including the previously referenced National Academy of Sciences, Clean Energy States Alliance and Scottish Natural Heritage reports. While specifically focused on wind power projects these recommendations should be applicable to other types of projects. In particular, they emphasize the importance of using photographs taken on clear days with high visual contrast*

*"The human eye is much sharper than any camera lens, and so photographs should be taken at high resolution, whether a film or a digital camera is used. Clear weather provides the best clarity of the scene as well as 'worst case conditions', which should be represented in all simulations to allow a complete evaluation." From National Academy of Sciences report.*

**“It is essential that all baseline photographs are taken in good visibility.** This will generally mean clear skies, in suitably clear air to allow sufficient contrast between the different elements within the landscape. This is particularly important for long-range views where poor light and atmospheric conditions such as haze or cloud can reduce the clarity of the view, or for views where the turbines are predominantly viewed against the sky.” From Scottish Natural Heritage report.

- (8) If the proposed facility is required by Federal Aviation Administration regulations to install aircraft warning lighting, a description and characterization of the potential visual impacts of this lighting, including the distance from which lighting will be visible on a clear night and the number of lights visible from key observation points and representative public and private properties; and

*Nighttime aircraft warning lighting is intended to be visible for considerable distances and can create aesthetics impacts considerably beyond 10 miles. This information should be included in the application. Since the public may be more likely to be negatively impacted by nighttime light pollution from their residences or more general public places compared to key observation points (that may receive much greater daytime than nighttime use), this analysis needs to take that fact into consideration. Night light pollution is an omnipresent problem in many parts of New Hampshire and the highly visible flashing lights associated with energy projects can compound it.*

**Site 301.14 Criteria Relative to Findings of Unreasonable Adverse Effects.**

Site 301.14(a)(6) ~~Whether the proposed facility would be a dominant feature of a landscape in which existing human development is not already a prominent feature as viewed from affected scenic resources~~Whether the proposed facility would be a dominant and prominent feature within a natural or cultural landscape of high scenic quality or as viewed from scenic resources of high value or sensitivity;

*Explanation: New Hampshire has been settled since the 1600s and most of NH’s landscape has some visible human influence or development. Without recognizing high value “cultural landscapes”, areas like the very scenic Connecticut River agricultural landscape would be precluded.*

*Also, the criterion as written makes no reference to the scenic quality of the landscape or the importance of the viewpoints from which the project would be seen. These are critical components for determining whether the project would have an unreasonable adverse effect and should be included.*

Site 301.14(e)

- (1) The significance of the affected resident and migratory fish and wildlife species, rare plants, rare natural communities, and other exemplary natural communities, including the size, prevalence, dispersal, migration and viability of the populations in or using the area;
- (2) The nature, extent, and duration of the potential effects on the affected resident and migratory fish and wildlife species, rare plants, rare natural communities, and other exemplary natural communities;
- (3) The nature, extent, and duration of the potential fragmentation or other alteration of terrestrial or aquatic significant habitat resources or migration corridors.

*Not all biological resources are static in a particular location or habitat. Hydroelectric facilities, wind farms and energy corridors can impact both resident and migratory species and their terrestrial, aquatic or aerial migration pathways. This needs to be incorporated into the criteria.*

*We have also proposed an additional definition for “migration corridors” as Site 102.24 (see earlier).*

### **Site 301.16 Criteria Relative to Finding of Public Interest**

*We support this language and appreciate your adoption of our proposal. These criteria are clearly necessary to support the newly required public interest finding established by SB 245.*

*It was suggested during the September 15, 2015 public hearing that the Senate had considered and rejected language requiring consideration of net environmental and economic effects as set forth in parts (a) and (b) of this section by the SEC in making this finding. We strongly dispute this. Based on communication from Will Abbott of SPNHF, who was present at an SB245 stakeholder discussion with Senator Bradley, a decision was made to keep the SB245 language on the public interest finding to a single sentence, and to leave the details to the rulemaking process. To our knowledge neither the Senate nor the House ever voted on or rejected language that would require consideration of net environmental and economic benefits.*

*It was also suggested at the hearing that part (c) (consideration of consistency with federal, regional, state and local policies) was repealed by the Legislature in 2009 and is thus not appropriate for inclusion. The 2009 law repealed the existing section 162-H:16.IV(d), which required a finding that “Operation is consistent with the state energy policy established in RSA 378:37.” However, the proposed part (c) is not a requirement, but merely requires consideration of consistency with established policies. In addition, the proposed consideration encompasses a wider arrange of policies than just the state energy policy. We do not believe that the repeal of the previously required finding negates the ability of the SEC to give consideration to consistency of the project with a range of public policies.*

*Finally, it was suggested at the hearing that part (d) (consideration of consistency with municipal master plans and land use regulations) is contrary to the legally established principle that SEC decisions override local decisions. We disagree with this. This provision does not give local authorities the ability to override SEC decisions. It merely requires the SEC to consider the consistency of the project with these local plans and regulations.*