THE STATE OF NEW HAMPSHIRE

SITE EVALUATION COMMITTEE

Docket No. 2015–02

APPLICATION OF ANTRIM WIND ENERGY, LLC
FOR A CERTIFICATE OF SITE AND FACILITY

APPLICANT ANTIRM WIND ENERGY, LLC POST-HEARING MEMORANDUM

Antrim Wind Energy, LLC ("AWE" or the "Applicant") by and through its attorneys, McLane Middleton, Professional Association, respectfully submits this Post-Hearing Memorandum.

I. INTRODUCTION

The Applicant has developed and refined the Antrim Wind Project (the "Project") over the past seven years in order to present to the New Hampshire Site Evaluation Committee ("SEC" or the "Subcommittee") a comprehensive, well-sited Project that will bring significant clean energy, conservation, economic, and environmental benefits to the region and the State. The Project now before the SEC is in the unique position of being the first wind project in New Hampshire to earn the support of The Nature Conservancy and The New Hampshire Sierra Club. The Project is also supported by the Board of Selectman of the Town of Antrim, The New England Forestry Foundation, The New Hampshire Clean Tech Council, George Bald – the former Commissioner of the Department of Resources and Economic Development -- the International Brotherhood of Electrical Workers, and all five bi-partisan state legislators representing Antrim. The Applicant also previously reached a settlement agreement with the Appalachian Mountain Club, which resolved all of its concerns related to the Project. This widespread support, unifying diverse groups from conservation organizations, to out-door advocates to professional regulators to union workers is a testament to AWE's efforts to work

with all entities to address concerns and present a balanced proposal that will minimize impacts as much as possible while implementing important State policies and bringing substantial benefits to the region.

Throughout the development of this Project, AWE has spent significant time listening to and working with Antrim residents, Town leaders, and many other interested parties. AWE has also worked closely with all State agencies having jurisdiction over any aspect of the Project, and those agencies have recommended approval, subject to agreed-upon conditions.

AWE recognizes that, despite these efforts, there are members of the Antrim community, including intervenors in this docket, who still have concerns about the Project. AWE respects these concerns and has worked diligently to address them. Over the course of this hearing AWE has entered into MOUs or agreed conditions with numerous interested parties.[1] AWE understands that in some cases these efforts will not necessarily bridge the gaps that still exist. Nevertheless, if the Subcommittee grants a Certificate, AWE will continue its efforts to find common ground with those residents and continue addressing their concerns whenever possible.

No energy project can be constructed with zero impacts. New Hampshire statutes and SEC rules reflect this fact and require an applicant for a new energy facility to demonstrate that the construction and operation of the proposed facility will not result in unreasonable adverse effects and will be in the public interest. The evidence in the record demonstrates that the Project will not have an unreasonable adverse effect. Experience at wind farms around New England confirms that the typical user will continue to enjoy boating, fishing, hiking, birding and the beauty and solitude of nature at Willard Pond and other local resources. The record further

[1] These agreements include the following: 1) New Hampshire Audubon to add protection for the Common Nighthawk; 2) Town of Antrim to address their concerns around decommissioning; 3) Town of Antrim to address sound and shadow flicker effects to potential new structures; and 4) Department of Historic Resources to address effects to White Birch Point.

shows that the Project will serve the public interest. Participating landowners in the region exercised their right to lease their land to the Project in exchange for the permanent conservation of land that they could have otherwise chosen to develop. Respected conservation organizations in the region confirm that the package offered by the Project, including 908 acres of high value land and $100,000 to the New England Forestry Foundation, will greatly enhance the conservation efforts in the region, connecting efforts of the Quabbin to Cardigan Partnership, including lands conserved by the Harris Center and New Hampshire Audubon. Additionally, the views of the public in the region, as represented by all locally elected officials, from the elected Board of Selectmen to all four State Representatives and the State Senator, support the development of the Project. The environmental and economic benefits that the Project brings to the region and the State are of critical value and will preserve and enhance the rural character and enjoyment of the natural environment in the region.

The Applicant appreciates the time the Subcommittee has taken to assess this Project. The Subcommittee now has before it a complete record. The Applicant will tie the key aspects of that factual record to the statutory criteria the Subcommittee must consider in order to determine whether to issue a Certificate of Site and Facility to AWE. As outlined below, the record before the Subcommittee demonstrates that the Applicant has satisfied its burden with respect to each of the findings required by RSA 162-H:16, IV.

II. BURDEN OF PROOF

The Applicant bears the burden of proving facts sufficient for the Subcommittee to make the findings required under RSA 162-H:16 by a preponderance of the evidence. *See* N.H. Admin. Rule Site 202.19 (a) and (b). Specifically, the four criteria identified by the Committee's rules, and RSA 162-H, IV, include the following: (1) the applicant has adequate financial,

technical, and managerial capability to construct and operate this facility; (2) the site and facility will not unduly interfere with the orderly development of the region, giving due consideration to municipal and regional planning commissions; (3) the site will not have an unreasonable adverse effect on aesthetics, historic sites, air and water quality, the natural environment, and public health and safety; and (4) the issuance of a certificate will serve the public interest. As outlined below, the record before the Subcommittee demonstrates that the Applicant has satisfied its burden with respect to each of the findings required.

III. THE PROPOSED PROJECT IS MATERIALLY DIFFERENT

A. ***Res Judicata***

Counsel for the Public, and other intervenors in this docket, have argued that the proposed Project is not materially different from the proposal in the 2012 Antrim Docket. The legal standard to assess their assertions is clear. For the doctrine of *res judicata* to apply, "three elements must be met: (1) the parties must be the same or in privity with one another; (2) the same cause of action must be before the court in both instances; and (3) a final judgment on the merits must have been rendered on the first action." *Brzica v. Trustees of Dartmouth College*, 147 N.H. 443, 454 (2002). These criteria have not been met. Both the parties[2] in this docket as well as the cause of action are not the same in this proceeding.

[2] Walden Green Energy and RWE were not parties in the previous docket and, since the prior docket, Eolian was acquired by Walden Green Energy. Counsel for the Public alleges that because Antrim Wind Energy was the Applicant in the prior docket and is the Applicant in the current proceeding, the parties are the same. This assertion ignores the corporate structure of Antrim Wind Energy, which is significant in the context of the SEC's review of an Application and its required findings with respect to technical and managerial capability. In addition, Walden Green Energy and RWE cannot be said to be in privity with Antrim Wind Energy. The New Hampshire Supreme Court has held that "[t]he relationship between party and non-party implied by a finding of privity…has been described as one of 'virtual representation'…not a formal, but a functional relationship, in which, at a minimum, the interests of the non-party 'were in fact represented and protected in the [prior] litigation.'" *Daigle v. City of Portsmouth*, 129 N.H. 561, 571(1987). The Court in *Daigle* gives examples of privity such as an employee taking over defense of a respondent superior claim or if a non-party authorizes a party in litigation to represent its interests. The relationship between Walden Green Energy and Antrim Wind Energy here is not comparable to these types of examples. At the time of the prior docket, Walden Green Energy had no interest at all in either the prior project or the current

Whether one focuses on the purpose for the *res judicata* doctrine, or applies the New Hampshire Supreme Court's approach articulated in *CBDA Dev., LLC v. Town of Thornton,* the critical test is the same. The issue is whether this is the same cause of action and whether the proposed Project is materially different. As the Court noted in *CBDA Development,* "whether a subsequent site plan application materially differs from a prior application involving the same property is a fact-sensitive inquiry that cannot easily be condensed into a simple checklist." *CBDA Dev., LLC v. Town of Thornton*, 168 N.H. 715, 722 (2016). Based on the factual record before the Subcommittee, it is clear that the proposed Project materially differs from the 2012 Antrim proposal.

The changes to the Project include both physical changes as well as modifications to the mitigation package proposed. AWE made targeted physical changes to the Project design to reduce aesthetic impacts. The turbine closest to Willard Pond, Turbine 10, has been removed. Turbine 9 has been lowered so that the tower and nacelle are below the tree line when examined from Willard Pond. These two modifications have a dramatic effect on overall visibility from the region and from many sensitive resources. In addition to being shorter, the Siemens turbines are also quieter, and smaller in other dimensions.[3] These changes further minimize visibility of the Project from scenic resources in the region. The number of turbines visible from Willard Pond and Gregg Lake, as well as other scenic resources has been reduced.[4] Within the 10 mile study area, the area of potential visibility has been reduced by 12%. *See David Raphael Prefiled Testimony*, App. Exh. 9, p. 16.

Project. There is no way there interests could have been "in fact represented and protected in the prior litigation" because at the time of the prior docket, they had no interest.

[3] The tower diameter is reduced by 13% at the base and 15% at the top and the length of the nacelle is reduced by 19%.

[4] At Willard Pond the number of turbines visible has been reduced from 8 or 9 to 6 or 7 and at Gregg Lake from 9 to 6 or 7.

AWE has also significantly increased the mitigation associated with the Project. AWE has added 100 acres of conservation land that will now conserve 100% of the ridgeline. AWE will provide $100,000 to New England Forestry Foundation to acquire new permanent conservation lands in the general region of the Project "for the enhancement and maintenance of the region's aesthetic character, wildlife habitat, working landscape, and public use and enjoyment." *Jack Kenworthy Prefiled Testimony*, App. Exh. 10, p. 20. In addition, AWE has entered into agreements with the Town of Antrim to provide additional public benefits.[5] In the prior docket and in the jurisdictional docket for the current Project, Jean Vissering, the visual expert for Public Counsel, provide a list of mitigation measures. AWE has addressed all of these measures to the maximum extent practical. These significant changes support the assertion that this is not the same cause of action.

In addition to the factual record, as a matter of law, Counsel for the Public is incorrect that this Application is the "same cause of action" as the 2012 Antrim proposal, and therefore is prohibited. The Subcommittee's Jurisdictional Order and Decision recognized that the SEC would need to make a factual inquiry to determine whether the differences between the proposals are different enough to yield a different result. *Jurisdictional Decision and Order*, Docket No. 2014-05, p. 38 (September 29, 2015). It is far too simplistic, and too late as further discussed below, to contend that the current Application is prohibited.

Moreover, a determination that a subsequent application, that makes substantial modification, is barred by the doctrine of *res judicata* is fundamentally contradictory to New Hampshire Supreme Court precedent. The New Hampshire Supreme Court has held that in the context of administrative proceedings, an applicant may file a new application if the application

[5] AWE will provide $40,000 to the Town of Antrim to for the enhancement of the recreational activities and aesthetic experience at the Gregg Lake Recreational Area. AWE will also provide $5,000 per year to the Antrim scholarship fund.

includes material changes or a change of circumstances has occurred. *Morgenstern v. Town of Rye*, 147 N.H. 558 (2002). The changes which the New Hampshire Supreme Court have held to be sufficient in order to make the application "materially different," are commensurate in scale and scope with the changes made by AWE in their current Application.

The changes made by the Applicant to the Project design are significantly more than the types of changes ruled sufficient by the New Hampshire Supreme Court in *Morgenstern*, where the Court held that a new driveway design that no longer required retaining walls was a sufficient change. AWE has eliminated more than 10% of the Project from the prior design, as well as increasing conservation lands proposed, investing additional funds in local improvements, and employing a quieter, more slender turbine model. These changes would constitute a significant change under New Hampshire Supreme Court precedent. This conclusion is buttressed by the SEC's conclusion in the 2012 Antrim Docket. In its Order on Pending Motions denying the motion to reopen the record, the SEC decided consideration of the alternative configurations proposed would be improper because they would likely change the dynamics of the proposed project to such a degree that the consequences could not be confidently assessed.[6]

In addition to changes to the Project design, community benefits and mitigation package, this new Project proposal is subject to review under a revised statute and new rules. The SEC spent significant time developing and revising its governing rules to ensure that projects are evaluated under the appropriate criteria. Key aspects of the framework the Subcommittee must use to assess the Project are different and new findings are now required under the SEC's newly

[6] *Order on Pending Motions*, Docket No. 2012-01, p. 10-11 (September 10, 2013)("The Subcommittee finds that the review of the new evidence submitted by the Applicant would require the re-review of the entire Application in light of the requirements set forth by RSA 162-H. A distinction must be made between a request which would require the Subcommittee to review new evidence and a request which would materially change the original Application and would require the Subcommittee to conduct an extensive re-review of the entire Application. Although reopening of the record is permissible under the first set of circumstances, it is unacceptable under the second. Here, the Applicant seeks to introduce evidence which would materially change the original Application and would require extensive de novo review.").

adopted rules. Further, this Subcommittee spent almost a year and 13 days of adjudicative hearings assessing an enormous volume of evidence regarding the differences in the current proposed Project. To argue, as Counsel for the Public does, that this is the same project, subject to the same legal analysis, *see Post Hearing Memorandum of Counsel for the Public*, p. 10-11, defies common sense.

The findings required for this docket involve issues that could not have been brought and were not brought during the prior proceeding. For example, in the prior docket, the Committee declined to consider the applicant's modifications to the project as part of the applicant's request for rehearing and to reopen the record, which included only a portion of the changes now included in the current Application, because the Subcommittee determined consideration of these material changes "would require re-evaluation of the entire Application." *Order on Pending Motions*, Docket No. 2012-01, p. 11 (September 10, 2013). Since the prior project, among other changes proposed, AWE has removed turbine 10, a change that was addressed by the Committee, but was explicitly determined could not be assessed in the prior docket.

In addition to not satisfying the elements necessary for *res judicata* to apply, the policy rationale for the doctrine is also not served in this case. Judicial economy can only be promoted if *res judicata* and collateral estoppel claims are raised in a timely manner – something Counsel for the Public failed to do here. By waiting to raise these claims until after vast resources have already been expended litigating this case, Counsel for the Public not only undercuts the very purpose of these doctrines, but she also arguably waived the claims.

The New Hampshire Supreme Court's decision in *CBDA Dev. v. Town of Thornton*, is consistent with the assertion that the appropriate time to raise the applicability of *res judicata* is early in the process (here, after the Application was accepted). In *CBDA*, the Supreme Court

held "[a]ccordingly, before accepting a subsequent application under the *Fisher* doctrine, a board must be satisfied that the subsequent application has been modified so as to meaningfully resolve the board's initial concerns…An administrative board 'should not be required to reconsider an application based on the occurrence of an inconsequential change, when the board inevitably will reject the application for the same reasons as the initial denial.'" *CBDA Dev. v. Town of Thornton*, 168 N.H. 715, 725 (N.H. 2016); *citing Brandt Dev. Co. v. City of Somersworth*, 162 N.H. 553, 556 (2011). This holding supports the proposition that *res judicata* and collateral estoppel should be raised at the time of acceptance and before the administrative agency considers the merits of the Application. Counsel for the Public's argument, filed at virtually the end of the proceeding, is inconsistent with the law and completely undercuts the clear policy goal of preserving judicial economy that is the foundation of these doctrines.

Given the changes made to the Project and the new Application before the Committee, Counsel for the Public's argument that this is the same cause of action is not supported by the record. This is a new project, with materially different impacts and benefits, this is subject to review under a revised statute and a comprehensive set of new rules with new evaluative criteria. As such, from both a legal and policy perspective, *res judicata* does not apply in this case.

B. <u>Collateral Estoppel</u>

As with *res judicata*, Counsel for the Public's argument that collateral estoppel, or claim preclusion, should apply in this case is inconsistent with the fundamental purpose for the doctrine as well as the law.[7] The purpose for collateral estoppel is to "preclude[] the relitigation

[7] In New Hampshire, for collateral estoppel to apply, "the following elements must be satisfied: (1) the issue subject to estoppel must be identical in each action; (2) the first action must have resolved the issue finally on the merits; (3) the party to be estopped must have appeared in the first action or have been in privity with someone who did; (4) the party to be estopped must have had a full and fair opportunity to litigate the issue; and (5) the finding must have been essential to the first judgment." *Farm Family Mut. Ins. Co. v. Peck, 143 N.H. 603, 605* (1999) (citing *Appeal of Hooker*, 142 N.H. 40, 43-44 (1997)).

by a party in a later action of any matter actually litigated in a prior action in which he or someone in privity with him was a party." *Appeal of Manchester Transit Auth.*,146 N.H. 454, 461 (2001). The key issues in the Application currently before the Subcommittee were not litigated in a prior action.[8]

As explained previously, as a factual matter this is fundamentally a new Application and consequently, the essential predicate for claim preclusion is absent. *See supra* p. 5-6. All of the essential findings are therefore fundamentally not identical. The substantial modifications made to the proposed Project require the Subcommittee to evaluate the Project in its totality under the newly revised statute and under the Site Evaluation Committee's newly adopted rules and criteria.[9]

With respect to off-site mitigation, again the Committee's new rules now require the Committee to consider the effectiveness of mitigation proposed. Site 301.14(a)(7), (b)(5), (e)(5), (e)(6), (f)(1), (3), and (4). The mitigation package in this docket is not the same as the one proposed in the prior proceeding and must be evaluated in its totality.[10] All of the changes made must be taken into account collectively, consistent with the findings required by the rules. The

[8] For example, Counsel for the Public asserts that the issues of identification of sensitive sites and the issue of benefits of off-site conservation to mitigate aesthetic impacts were resolved in the prior docket. That is incorrect. The SEC did reach a final determination in the prior docket, but it did so in the context of a different project under different rules, and it did not even make a final finding with respect to all the criteria required under the rules. Moreover, the Committee never reached a final determination with respect to financial capability. *Decision and Order Denying Application for Certificate of Site and Facility*, Docket No. 2012-01, p. 39-40 (April 25, 2013).

[9] AWE has sought to address concerns raised in the prior docket including: making modifications to the design, eliminating turbine 10 and shortening turbine 9; establishing new financial partners for the Project and securing long term power purchase agreements and other financial agreements to ensure the financial viability of the Project; changing the type of turbine used to a quieter model; expanding the conservation land being offered as part of a mitigation package; and adopting a more comprehensive, responsive bird and bat adaptive management plan.

[10] In the prior docket when AWE proposed only some of the modifications proposed, the Chairperson of the committee found: "you take these four, five issues, and you're going to be retrying an awful lot of the evidence about the turbine design and the sound impacts and the visual impacts and the ridgeline protection. It strikes me as really pretty significant. . . . It's really a new modified proposal. . . . It's really new, it's all new issues would be presented, not all, but a number of new issues to be presented." *Deliberations on Motions*, Docket No. 2012-01, p. 98 (July 10, 2013).

components of the mitigation package cannot be evaluated piece-meal as Counsel for the Public suggests.

Additionally, Counsel for the Public asserts that changes to the Project have not changed the importance of the scenic resources, identified in the 2012 Antrim Docket. Counsel for the Public's assessment, however, fails to take into consideration the changes in visibility at the sensitive resources based on the changes made to the proposed Project. *See supra* p. 5-6. *The issue is not the value of the resources; the issue is the effect of the revised Project on those resources, and the evidence shows that these effects are dramatically different.* This issue is not the same as the one litigated in the prior docket. Moreover, since the last docket, the adoption of new SEC rules, which contain new evaluative criteria, also preclude application of collateral estoppel.[11] *See Brandt Dev. Co. v. City of Somersworth*, 162 N.H. 553 (2011).

In sum, based on the substantially different factual record before the Subcommittee as well as the changes made to the pertinent law in New Hampshire, collateral estoppel is not applicable and would not promote judicial efficiency in this case given the late filing of Counsel for the Public's motion.

IV. THE COMMITTEE'S REQUIRED FINDINGS UNDER THE STATUTE

A. Applicant's Financial, Technical and Managerial Capability

RSA 162-H:16, IV(a) requires the Applicant to prove it has adequate financial, technical and managerial capability to assure construction and operation of the facility in continuing

[11] The New Hampshire Supreme Court held in *Brandt Dev. Co. v. City of Somersworth*, that "doctrinal changes, taking place in the fifteen-year period between Brandt's applications, create a reasonable possibility — not absolute certainty — of a different outcome." 162 N.H. 553, 560 (2011). While the ultimate outcome may not change, the New Hampshire Supreme Court's holding in *Brandt* suggests, at a minimum, that changes in the law require a reevaluation of an application. Based on the SEC's adoption of new rules alone, the current Application before the Subcommittee must be reviewed de novo.

compliance with the terms and conditions of the certificate. The record clearly demonstrates that AWE satisfies these statutory criteria.

1. <u>Financial Capability</u>

The Applicant, backed by RWE, has assembled a team with substantial experience in large industrial scale energy project finance. The Walden management team has a combined 45 years of experience and has structured, led, and executed a number of prominent hedging, off-take and financial transactions for utilities and energy producers. *Application,* App. Exh. 33, p. 61. RWE, as a project partner and majority owner of Walden Green Energy, and one of the five largest electrical and gas utilities in Europe, will provide the construction and permanent equity for the Project, as well as guidance and expertise during the construction and operational phase. *Application,* App. Exh. 33, p. ES-3; *see also Tr. Day 1/Morning Session*, p. 60.

"Construction equity is the most important part of the financing structure as it evidences the readiness of the project sponsor to take the risk of construction." *See Eric Shaw and Henry Weitzner Supplemental Testimony*, Exhibit App. 20, p. 1. Once the construction equity is in place the rest of the capital structure can be secured. However, a certificate is a critical "condition precedent for banks to provide the debt on the Project." *Tr. Day 1/Afternoon Session*, p. 46. AWE has received several letters of interest ("LOI") for providing construction debt financing from major financial institutions, including Bayerische Landesbank and KeyBank further demonstrating the financial capability of the Applicant. *See Application,* App. Exh. 33, *Appendix 18b and 18c*. In addition, the Applicant has received LOI's for providing tax equity for the project from Citigroup and Boston-based State Street, as well as CCA Group. *See Eric Shaw and Henry Weitzner Supplemental Testimony*, Exhibit App. 20, Attachment W/S 1, 2 and

3. These LOIs speak to the strong contacts that the AWE team has in the market place, and they support the credibility and strength of the Project.

The willingness of lenders and tax equity providers to support the Project is a testament to the expected financial returns of the Project. These returns are tied to the quality of the wind resource and the robustness of the wind measurement campaign.

The Applicant has surpassed industry standard practice in terms of acquiring wind data at the site to support projections about energy production and revenue generation. As Mr. Weitzner testified, "[n]ormally, banks require two years of [wind] data; this project has four years of data, with a LiDAR campaign." *Tr. Day 1/Morning Session*, p. 57. The Applicant partnered with V-Bar for design and oversight of the LiDAR measurement campaign as well as assessment of the wind resource at the site. V-Bar has been working on wind resource assessments in the wind industry since 1983 and has sited over 10,000-MW of wind turbines, working on over 25% of all operating turbines in the United States. *V-Bar Summary of Wind Resource Assessment*, App. Exh. 31, p. 1.

In order to ensure strong project economics in advance, AWE has pursued a number of Power Purchase Agreement ("PPA") opportunities. AWE has already closed an arm's length transaction with New Hampshire Electric Coop. and signed a PPA for 25% of the Project output, ensuring that retail customers in New Hampshire will directly benefit from the Project's renewable energy. *See Eric Shaw and Henry Weitzner Supplemental Testimony*, App. Exh. 20, p. 7; *see also Tr. Day 1/Morning Session*, p. 68. In addition, AWE and Partners HealthCare have entered into a LOI to negotiate a power purchase agreement pursuant to which Partners would purchase 75% of the electricity and renewable energy credits generated by the Project. *See Tr. Day 11/Afternoon Session*, p. 169. Further, on October 24, 2016, AWE was also selected to enter

into negotiations for long-term contracts for electricity and renewable energy credits pursuant to the New England Clean Energy RFP. AWE now has multiple parties that wish to buy electricity and RECs from the Project. The Project is oversubscribed. This demand for the output of the Project from highly reputable utilities and credit-worthy institutions further speaks to the financial viability of the Project and the credibility of the development team.

To further lock in Project economics, AWE has signed a Turbine Supply Agreement and Service and Maintenance Agreement with Siemens. These contracts guarantee the price, deliverability, service, and warranty of the turbines, the most critical part of the Project. In addition, as noted by Mr. Weitzner in his supplemental prefiled testimony, the Applicant intends to safe harbor the Production Tax Credit ("PTC") (or Investment Tax Credit ("ITC")) for 4 years from the date construction begins. *See Eric Shaw and Henry Weitzner Supplemental Testimony*, Exhibit App. 20, p. 5-6. In order to ensure that the Project will receive the full value of these tax credits, AWE has entered into a contract with Siemens to purchase the main transformer for the Project, ensuring access to the full value of the tax credits.

As a last guaranty of financial viability, AWE has committed to demonstrating to the SEC that all construction financing is in place before start of construction. *See Application*, App. Exh. 33, p. 68. This commitment guarantees that: 1) there will be sufficient capital to complete construction of the Project in a manner compliant with industry standards; 2) the Project will generate sufficient cash flow during operation to meet all operating costs and service of its financing obligations; and 3) there will be sufficient capital assurance to cover the cost of decommissioning the Project at the end of its useful life, whenever that should occur. Walden will employ a traditional project financing structure for U.S. wind projects, as described in its application, in which construction equity and construction debt will be sized to ensure that the

Project can always meet its operating costs and debt payments. *See Application*, App. Exh. 33, p. 66 (describing Debt Service Coverage Ratio); *see also Eric Shaw and Henry Weitzner Supplemental Testimony*, App. Exh. 20, p. 3.

Pursuant to Site 301.08, AWE has also provided a decommissioning plan as part of its application and has provided an updated estimate for decommissioning, based on changes made to the new rules, which require the removal of infrastructure down to four feet. *See Supplement to Application re: New Rules*, App. 34, Cover Letter p. 5; *See also Jack Kenworthy Supplemental Testimony*, App. Exh. 24, p. 25. AWE has reached an agreement with the Town of Antrim to provide an irrevocable letter of credit for the cost of decommissioning, consistent with the SECs rules. *Decommissioning Language with Board of Selectmen,* App. Exh. 39. AWE has further agreed that it will provide documentation to the Town each year demonstrating that the extension of the irrevocable letter of credit complies with all Town and SEC requirement. *See Decommissioning Language with Board of Selectmen*, App. Exh. 39. AWE has committed to working with the Town of Antrim to address any concerns it may have regarding decommissioning funding assurance to demonstrate that the Project is financially viable, able to meet its obligations during construction and operation, and will continue to meet its obligations through to decommissioning as well. *See Tr. Day 1/Morning Session*, p. 48.

2. <u>Technical and Managerial Capability</u>

The Project will be constructed and operated by a team that has substantial experience with wind projects throughout New England and the United States. The Applicant will draw from the significant experience of its Board of Directors, in managing large energy and infrastructure projects, to ensure that the Project is constructed and operates in a manner consistent with all certificate conditions and all state and federal regulations. *See Tr. Day*

2/Afternoon Session, p. 65. RWE, which operates over 3,000 megawatts of wind globally, brings significant managerial and technical expertise to this process. *See Tr. Day 2/Morning Session* p. 119. The Applicant will rely on the expertise of Walden and RWE in project oversight and management, which will be applied to "a team of technical performers and technical advisors that are…peerless in the industry." *Tr. Day 2/Morning Session* p. 121-22.

Under the supervision of the Applicant's experienced Board of Directors, Reed & Reed will be responsible for managing the construction phase of the Project. AWE has entered into a Preconstruction Services Agreement with Reed & Reed and will negotiate a final Balance of Plant construction contract after all permitting is complete. *Application,* App. Exh. 33, p. 70. Reed & Reed is the most experienced wind power contractor in the northeast and has constructed over 17 wind energy projects in New England, totaling 416 turbines. *Application,* App. Exh. 33, p. 31; *see also Application*, App. Exh. 33, Appendix 19A. The Project will be constructed consistent with state and federal requirements as well as any conditions included in the certificate. Reed & Reed has extensive experience overseeing project construction and ensuring compliance with all applicable conditions. *Application*, App. Exh. 33, Appendix 19A. Siemens will be responsible for manufacturing and delivering the turbine components to the Project site. *Application,* App. Exh. 33, p. 70. Siemens will also be responsible for turbine commissioning.

In addition to RWE and Walden's experience managing large scale energy projects, the Applicant has also contracted with DNV GL as owner's engineer for the development, construction and operation phase of the Project. *Tr. Day 2/Morning Session*, p. 149. DNV GL is a leading technical consultant in wind projects. Additionally, DNV GL has performed independent engineering on approximately 30 projects in New England. *See Tr. Day 2/Morning Session*, p. 144, *Tr. Day 2/Afternoon Session*, p. 60. The Applicant will utilize DNV GL's

significant expertise and resources to ensure effective construction oversight and a smooth transition from start of construction through operations of the Project. *Application,* App. Exh. 33, p. 69.

The Applicant has selected Siemens Energy, Inc. as its turbine supplier and service and maintenance provider. *Application,* App. Exh. 33, p. 70. Since the Application was initially submitted to the SEC, the Applicant and Siemens have executed a Turbine Supply Agreement ("TSA") and Service and Maintenance Agreement ("SMA") with respect to the Project. The SMA with Siemens will continue for two years. After two years, the term will either be extended or the Applicant may contract with a third party service provider of comparable expertise and reputation. *Application,* App. Exh. 33, p. 70; *Tr. Day 2/Afternoon Session,* p. 30-31. Should the Applicant choose to have a third party provider take over the service agreement after the initial two-year period, the Applicant would consider a provider such as "EDF Renewable Services or UpWind. Both firms operate about 3000 megawatts of wind energy facilities of a variety of different types of manufacturers here in the US." *Tr. Day 2/Afternoon Session,* p. 30.

Once constructed, the Project will be staffed with two to three experienced, Siemens, technicians who will perform all scheduled and unscheduled maintenance of the turbines, as well as maintain all safety equipment. *Application,* App. Exh. 33, p. 70. In addition to two Siemens employees, the Applicant will hire two additional, qualified technicians who will perform balance of plant maintenance and ensure continued compliance with any and all SEC conditions at the Project site. *Application,* App. Exh. 33, p. 72. Additionally, the town will be provided with a telephone number for the AWE employees so that if any resident has a complaint or concern about the operation of the Project, an employee of the Project may be contacted directly.

The foregoing uncontested evidence supports a determination that the Applicant has the adequate technical and managerial capability to assure that the Antrim Wind Project will be constructed and operated in continuing compliance with a Certificate of Site and Facility issued by this Subcommittee.

B. The Site and Facility Will Not Unduly Interfere with the Orderly Development of the Region.

RSA 162-H:16, IV(b) requires the Subcommittee to find that the site and facility will not unduly interfere with the orderly development of the region with due consideration having been given to the views of municipal and regional planning commissions and municipal governing bodies. In the prior 2012 docket, the Committee determined that "the proposed Facility would not unduly interfere with the orderly development of the region." *Decision and Order Denying Application for Certificate of Site and Facility*, Docket No. 2012-01, p. 45 (April 25, 2013). The evidence here includes the same PILOT agreement (with one amendment), nearly identical voting records from the Town, and the same master plan and zoning regulations. This evidence, summarized below, supports a finding that this Project will not unduly interfere with the orderly development of the region.

1. <u>Municipal and Planning Issues</u>

The Applicant has worked closely with town officials, particularly the Board of Selectmen, in the development of the Project and the Application currently before the Subcommittee. The Board of Selectmen has played an active role in this docket and has continuously expressed support for the Project throughout the past 7 years. *Board of Selectmen Testimony*, Antrim Exh. 2, p. 2; *see also Town of Antrim Post-Hearing Brief*, Docket 2012-01 (January 14, 2013). In addition, the Board of Selectmen has submitted a letter to Governor

Maggie Hassan expressing support for the proposed Project. *See Jack Kenworthy Supplemental Testimony,* App. Exh. 24, Attachment 9B.

The Town of Antrim, through its Board of Selectmen advised by counsel, negotiated a payment in lieu of tax ("PILOT") Agreement to ensure stable, predictable tax revenues for the Town. *See Town of Antrim PILOT Agreement,* App. Exh. 33, Appendix 17b and Appendix 17c. The Antrim PILOT is "the highest per MW payments of any wind project PILOT in the State of New Hampshire." *Jack Kenworthy Supplemental Testimony*, App. Exh. 24, p. 6. As noted by members of the Subcommittee, the region will receive benefits associated with the Project whether it is valued under a PILOT agreement or under ad valorem taxation. *Tr. Day 11/Afternoon Session*, p. 156. The Board of Selectmen chose a PILOT agreement, advised by counsel, because the Board believes it is best for the town of Antrim.[12] *Tr. Day 7/Afternoon Session*, p. 77. Any comparison of tax benefits associated with the Project under ad valorem taxation versus under a PILOT agreement has no bearing on whether the Project is consistent with the orderly development of the region; in either case, the Town will receive an additional benefit from the Project as the Applicant will be the largest single tax payer in the Town – roughly doubling the current highest taxpayer. *Jack Kenworthy Supplemental Testimony*, App. Exh. 24, p. 8. The proceeds from the PILOT payment are net proceeds to the Town. *Jack Kenworthy Supplemental Testimony,* App. Exh. 24, p. 8.

Since the 2012 Antrim Wind docket, the Antrim Planning Board has chosen not to engage in the current docket, other than supporting the SEC's decision to assert jurisdiction over the Project. Similarly, the Antrim Conservation Commission has chosen not to take a position in

[12] Parties in this docket have submitted testimony seeking to substitute their individual views for the views expressed by the Board of Selectmen, regarding the benefits of ad valorem taxation versus the benefits of a PILOT agreement. No party, however, has presented evidence "that can be explained, tested, verified, and defended" to support the assertion that ad valorem taxation is superior to the benefits of a PILOT agreement. *Tr. Day 11/Afternoon Session*, p. 157.

the current docket. Both the Planning Board and the Conservation Commission have left the elected Board of Selectmen to speak on behalf of the Town in this proceeding.

As noted in the Subcommittee's decision in the prior 2012 docket,

> matters pertaining to the proposed Facility were submitted to the voters of the Town of Antrim on the Town's warrant at two Town meetings. While the Applicant, the various Boards and other intervenors vehemently disagree about how the votes at town meetings should be interpreted, it was clear…that those votes generally indicate that the townspeople who voted generally supported the development of the proposed Facility.

Decision and Order Denying Application for Certificate of Site and Facility, Docket No. 2012-01, p. 41-42 (April 25, 2013). Similar disputes were raised in this proceeding regarding the meaning of the votes put before the voters of the Town of Antrim. With the exception of one additional ballot, the voting record before the Subcommittee in this docket is the same as the record before the Committee in 2012. The Applicant believes that as the Subcommittee held in the prior docket, these votes again demonstrate that Antrim voters support the proposed Project.

The first vote from November 2011 asked whether the Town should adopt a Large Scale Wind Energy Ordinance and secondly, if the Ordinance should prohibit wind energy in the rural conservation district. *Jack Kenworthy Supplemental Testimony*, App. Exh. 24, Attachment JK-1. If the ordinance had passed, it would have prohibited any commercial wind project from being built in Antrim. *Jack Kenworthy Supplemental Testimony*, App. Exh. 24, p. 1. The Applicant opposed the ordinance, "the Board of Selectmen opposed the ordinance and so did the overwhelming majority of Antrim voters. This anti-wind ordinance was defeated by 501 to 309 votes." *Jack Kenworthy Supplemental Testimony*, App. Exh. 24, p. 2. Similarly, the second ballot item in November 2011, would have prohibited commercial wind in the rural conservation district. This ballot item was also defeated "584 to 225, with 72% of voters rejecting it." *Jack Kenworthy Supplemental Testimony*, App. Exh. 24, p. 2. Much has been made by opponents of

the Project that a wind facility does not belong in the Rural Conservation District. When the Town had the opportunity to vote on this issue, however, the voters overwhelming supported a wind energy facility in the Rural Conservation District. *Jack Kenworthy Supplemental Testimony,* App. Exh. 24, Attachment JK – 12. A second vote in March 2012, proposed by the Antrim Planning Board, would have also made commercial wind unfeasible in Antrim. This ordinance was also struck down by a vote of 350 to 244. *Jack Kenworthy Supplemental Testimony,* App. Exh. 24, p. 3. One additional vote took place, since the prior docket, in March, 2014. That proposed ordinance would have provided a framework for an application to be processed by the Town, however, voters "felt that Antrim Wind was writing the ordinance and were concerned about the lack of independent review" and therefore rejected the ordinance. *Jack Kenworthy Supplemental Testimony,* Exh. 24, p. 3. This final vote was not a reflection of the Town's view on wind development, but rather reflected the Town's desire to write its own ordinances, or have the SEC take jurisdiction over a complex siting process. *Tr. Day 7/Afternoon Session*, p. 95.

In addition to local community support that has been consistent over the past 7 years, and consistent over 7 Select Board elections (one member is up for election every year), the Project has also received written support from all five elected State representatives that represent Antrim in the State legislature. *See Jack Kenworthy Supplemental Testimony,* App. Exh. 24, Attachment JK-8A and JK-8B. The bi-partisan letter from all four State Representatives states that "The Antrim Wind Energy Project has broad support within the Town of Antrim, and both its Select Board and its citizens are anxious to move forward." *Jack Kenworthy Supplemental Testimony*, App. Exh. 24, Attachment JK-8A, p. 2. Additionally, the Project is in the unprecedented position of having support from numerous environmental organizations in the State including New

Hampshire Sierra Club, the Nature Conservancy, and New England Forestry Foundation. *See* App. Exh. 11, App. Exh. 16, App. Exh. 28, and App. Exh. 29.

While some have questioned whether the Project is consistent with the Town's master plan, it is clear from a review of the evidence that the Project is, indeed, in harmony with the master plan. *See Jack Kenworthy Supplemental Testimony*, App. Exh. 24, Attachment JK-15, Response to Public Counsel Data Request 1-22. The Project will encourage the growth of renewable energy, which is specifically encouraged in Chapter IV of the master plan. The Project will encourage economic development, the subject of Chapter XII of the master plan, and it will increase the Town's tax base. *Jack Kenworthy Supplemental Testimony*, App. Exh. 24, p. 13. In addition, the Project will conserve significant amounts of new open space in perpetuity to maintain the rural character of the Town, which is specifically noted in the master plan, including land that spans the Tuttle Ridge. *Tr. Day 7/Morning Session*, p. 24. There have been no changes to the Antrim Master Plan since the 2012-02 Docket despite the Planning Board having been informed in a written memo from their consultant, Jean Vissering, that the Master Plan did little to identify any specific resources as being of scenic value. *See* App. Exh. 46, p. 2; *see also Tr. Day 11 Afternoon Session*, p. 131-34.

Additionally, the Project site is located directly off of Route 9, which will minimize any local road or traffic concerns during transport of the turbine components. *Application,* App. Exh. 33, p. 54. Given the proximity of the highway to the Project site, the Applicant does not "anticipate that [delivery of project components is] going to require any road closures. Certainly not on local loads [sic] because we won't be using them." *Tr. Day 2/Afternoon Session*, p. 49.

2. Economic Impacts

As the largest taxpayer in the Town of Antrim, the Project will provide a wide range of significant economic benefits to the Town. Under the PILOT agreement, AWE will pay approximately $8.4 million to the Town of Antrim in PILOT payments during construction and the first 20 years of operation. *Matthew Magnusson Prefiled Testimony*, App. Exh. 4, p. 5. In addition, the Project is expected to bring $53.4 million in increased economic activity to Cheshire, Hillsborough, Merrimack, Rockingham and Sullivan counties. *Matthew Magnusson Prefiled Testimony*, App. Exh. 4, p. 5. During the construction phase, the Project is expected to contribute $11.6 million in economic activity and generate 25 full-time equivalent (FTE) construction-related jobs and support an additional 59 FTE jobs paying a total of $5.9 million in wages and earnings in the local area economy. *Matthew Magnusson Prefiled Testimony,* App. Exh. 4, p. 5. During the operation phase of the Project, the economic benefits will continue. The project is expected to contribute $2.2 million annually to the local economy, as well as create an estimated 4 FTE new jobs to operate the Project, and support an additional 8 FTE jobs in the local area. *Matthew Magnusson Prefiled Testimony,* App. Exh. 4, p. 5.

The Applicant also assessed the potential impact of the Project on property values within the Town and the region. *See Application,* App. Exh. 33, Appendix 14a *Economic Impact of the Proposed 28.8 MW Antrim Wind Power Project in Antrim, NH* and Appendix 14b, *Lempster Property Values 2014 Final*. The Applicant cited multiple studies, which evaluated hundreds of thousands of properties both in New England and across the United States, illustrating that the overwhelming body of objective evidence shows that winds farms do not have adverse impacts on property values.[13] These studies, as well as an evaluation of two New Hampshire studies

[13] Atkinson-Palombo & Hoen, *Relationship between Wind Turbines and Residential Property Values in Massachusetts* (2014) (This study near wind power projects in Massachusetts reviewed 122,198 residential property

reviewed, which evaluated the relationship between residential property values and commercial wind,[14] form the basis for Mr. Magnusson's conclusion that "there isn't any evidence to suggest that wind turbines impact any property values." *Tr. Day 3/Morning Session*. p. 166.[15]

Mr. Magnusson also concluded that wind facilities do not have an adverse effect on tourism. *Matthew Magnusson Prefiled Testimony*, App. Exh. 4, p. 6. Mr. Magnusson reviewed the study "The Impact of Wind Farms on Tourism in New Hampshire" (Dec. 2013), which examined and compared economic trends in the region before and after the construction of the Lempster Wind Power Project to determine if there was any evidence of the Lempster Wind Power Project impacting tourism activity in New Hampshire. *Application*, App. Exh. 33, Appendix 14a, p.7. Overall, this study concluded that the introduction of the Lempster Wind

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transactions located within 5 miles of a turbine between 1998 and 2012. Among those properties evaluated, 121 transactions were less than a quarter-mile from a turbine, 986 were between a quarter-mile and a half-mile and just over 6,000 were between a half-mile and a mile. The study concluded that there was no support for the claim that wind turbines affected nearby home prices); *Effects of Wind Turbines on Property Values in Rhode Island* (2013) (The study reviewed 48,554 property transactions and found no evidence of a relationship between residential property values and commercial wind power projects after the construction of the project); The Effect of Wind Development on Local Property Values (2003) (This study reviewed 2,788 property transactions in Vermont and found no evidence of a relationship between residential property values and commercial wind power projects after the construction of the project.) *See Application*, App. Exh. 33, Appendix 14b, *Impact of the Lempster Wind Power Project on Local Residential Property Values Update*, p. 26**.**

[14] Impact of the Lempster Wind Power Project on Local Residential Property Values (2012) (The study reviewed 2,583 single family home sales, 88 of which were post-construction, from January 2005 to November 2011, in communities surrounding the Lempster Wind Power Project); The Impact of the Wild Meadows Wind Farm on Local Residential Property Values (2013) (This study reviewed 382 single family home sales, 132 of which were post-construction, from January 2008 to July 2013, in communities surrounding both the Lempster and Groton Wind Projects.) Both studies concluded that there was no evidence of a relationship between residential property values and commercial wind power projects after the construction of wind power projects in New Hampshire. *Application*, App. Exh. 33, Appendix 14b, *Impact of the Lempster Wind Power Project on Local Residential Property Values Update*, p. 8**.**

[15] While the Applicant is aware that property owners in Antrim have raised concerns regarding this issue and that on the face of it these concerns seem to resonate, multiple empirical studies and the breadth of the literature do not support those concerns. *Tr. Day 3/Morning Session*. p. 163. The Applicant is aware that several property owners in this docket have expressed interest in the Committee imposing a property value guarantee, which this Committee has previously rejected. *See Decision Granting Certificate of Site and Facility with Conditions*, Docket No. 2010-01, p. 41-42 (May 6, 2011)("It is unclear how it may be implemented as a practical matter, taking into consideration other factors impacting the values of real estate in the area.") The Applicant has not sought to addressed or respond to this proposal because, principally, the Applicant believes that the overwhelming evidence demonstrates that there will be no adverse effect on property values, but secondly, the Applicant believes that there are practical impediments to any such agreement which would make it unworkable. Further it should be noted that several of the property owners requesting a property value guarantee do not currently have views of the ridge and will not have visibility of the Project from their homes. *Tr. Day 9/Afternoon Session*, p. 46.

Project appears to have had little or no impact on meals and room sales in the region.[16] State park use in the Lempster Wind region increased faster than in other regions of the State, with the largest increase occurring at the park closest to Lempster Wind, and weekend traffic volumes suggest that there has been no effect. *Application*, App. Exh. 33, Appendix 14a, p.7. Mr. Magnusson's assessment led to his conclusion that "there was no evidence to indicate that a relationship exists between wind power projects and tourism, therefore there is not expected to be any tourism impacts on the region from the Antrim Wind Power Project." *Application*, App. Exh. 33, Appendix 14a, p.7. No evidence has been submitted into the record to refute this finding. The overwhelming volume of evidence reviewed by Mr. Magnusson and included as part of the record in this proceeding demonstrates that tourism and property values will not be affected by the installation of this Project in Antrim or the region.

3. Effect on Conservation Efforts as Part of the Impact of the Facility on Orderly Development[17]

As noted above, the Project has received significant support from conservation organizations. The Nature Conservancy's 1,200-acre Loverens Mill Cedar Swamp Preserve is in close proximity to the proposed Project. After thoroughly reviewing the requirements set out in the Committee's rules, the Nature Conservancy concluded that "the overall impact [of the Project] is not unreasonably adverse and the application offers a reasonable package to help

[16] While Counsel for the Public alleged that the motocross facility in Lempster may add to consistency of tourism and the room and meal tax in Lempster, *see Tr. Day 3/Afternoon Session*, p. 12, Mr. Thurber's testimony illustrated that not to be the case. In fact Mr. Thurber testified that Lempster has "more complaints about the motorsports than [it does] on the windmills…[t]here's more complaints about the noise from the motor track." *Tr. Day 6/Afternoon Session*, p. 96-97. Mr. Thurber further testified, when asked by Ms. Weathersby if the motocross track brings a lot of people to Lempster, "[t]hey more or less pass through. They bring in their motorcycles on Saturday morning, and they disappear Saturday afternoon. If they have a meet or a race that lasts two days, they have an on-site area that they use campers." *Tr. Day 6/Afternoon Session*, p. 95.

[17] In the prior docket, the Committee assessed conservation efforts as part of its Orderly regional development analysis. *See Decision and Order Denying Application for Certificate of Site and Facility*, Docket No. 2012-01, p. 43-44 (April 25, 2013). The benefits of conservation to natural communities will be addressed separately in the Natural Environment subsection below.

mitigate or offset these impacts." *Comment Letter the Nature Conservancy*, App. Exh. 16, p. 12-13.

As the Nature Conservancy observed, the impact to Tier 1 habitat is limited, particularly in comparison to the amount of Tier 1 habitat that will be under permanent conservation easements as a consequence of the Project. *See Comment Letter the Nature Conservancy*, App. Exh. 16, p. 6. The 908 acres that will be conserved will bring significant additional wildlife and conservation benefits to the region, and this land will be placed under conservation easements 180 days from the commercial operation date of the Project. *Tr. Day 7/Morning Session*, p. 21.

The conservation lands proposed as part of the Project Application will play a significant role in connecting land currently held in conservation as part of the Quabbin to Cardigan Initiative. *See* Exh. LA – 14. While Ms. Allen testified that the Project area, which is currently not conserved might "eventually, 50 years from now, [be] possibly filled in," the obligations of the Applicant and the participating landowners, in fact, require that this land be placed in conservation 180 days after the date of commercial operation. *See Tr. Day 11/Morning Session*, p. 167-68; *see also Application*, App. Exh. 33, Appendix 10, *Conservation Easement Agreements*. The conservation of this land is not speculative and will provide a tremendous benefit in linking areas abutting the ridge that are currently conserved. Property owners that have signed agreements with the Applicant have stated that, without the Project, they do not intend to conserve this land. *Jack Kenworthy Supplemental Testimony*, App. Exh. 24, Attachment JK – 14A – 14D. Without the Project in place, these permanent conservation benefits, which are consistent with the goals set out in the Antrim Master Plan and in the designation of the rural conservation district, could not be realized by the Town or the region.

C. The Site and Facility Will Have No Unreasonable Adverse Effects

RSA 162-H:16, IV(c) requires that the Subcommittee find that the site and facility will not have an unreasonable adverse effect on aesthetics, historic sites, air and water quality, the natural environment, and public health and safety. Each of these criteria will be addressed separately below. The evidence submitted by AWE in support of its Application is consistent with such a finding for each factor considered.

1. Aesthetics

A central inquiry before the Subcommittee is whether the Project will have an unreasonable adverse effect on aesthetics in the region. Reinforcing past practice the SEC has, since the 2012 Antrim Wind docket, adopted an extensive set of new rules that prescribe both the type of information an applicant must file and the factors the Subcommittee must consider when determining whether a facility would have an unreasonable adverse effect on the aesthetics of the region. The new rules include specific requirements for the creation of a Visual Assessment report ("VA"), which must be included as part of the application, as well as seven specific criteria the SEC must consider in assessing visual effect.

The criteria identified in Site 301.14, require the Subcommittee to consider the effects of the Project on the viewshed in the region as a whole (rather than focus only on an individual resource). The seven criteria are:

> (1) the existing character of the area of potential effect; (2) the significance of affected scenic resources and their distance from the proposed facility; (3) the extent, nature, and duration of public uses of affected scenic resources; (4) the scope and scale of the change in the landscape visible from affected scenic resources; (5) the evaluation of the overall daytime and nighttime visual impacts of the facility; (6) the extent to which 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; and (7) the effectiveness of the measures proposed by the applicant to avoid, minimize, or

mitigate unreasonable adverse effects on aesthetics, and the extent to which such measures represent best practical measures.

The new criteria focus on the "area of potential effect" and "change in the landscape," speak in terms of "scenic resources" in the plural, and require an evaluation of "the overall daytime and nighttime visual impacts of the facility." Site 301.14 (emphasis added).

The central feature of the new rules continues to be the notion that the Subcommittee must evaluate potential aesthetic effects from a holistic perspective, that is, placing the facility in the larger context of the region, or its area of potential visual impact. In order to assist the Subcommittee's review, the rules require that an Applicant provide an assessment of individual scenic resources within the viewshed area, (Site 301.05(b)(5)), so the Subcommittee can appreciate the relationship of the individual parts to the whole area of potential visual effect. In reaching an ultimate conclusion, therefore, the Subcommittee can look at the totality of the regional viewshed and potential aesthetic effects to determine whether the effects are unreasonably adverse. This broad-based, holistic approach is clear from prior SEC decisions and from the language of the new rules.[18]

The Applicant engaged David Raphael from LandWorks to conduct a visual assessment of the Project and to prepare a VA. Mr. Raphael has been a landscape architect and planner, in both the public and private sector, since 1976. *David Raphael Pre-Filed Testimony,* App. Exh.

[18] *See, i.e.*, Lempster Wind Decision and Order in which "the Committee considers the effects on the viewshed in the region." *Decision Issuing Certificate of Site and Facility with Conditions*, Docket No. 2006-01, p. 27 (June 28, 2007); *see also* the Granite Reliable Power Decision and Order holding that "the Project will not have unreasonable adverse effects on the aesthetics of the area." *Decision Granting Certificate of Site and Facility with Conditions,* Docket No. 2008-04, p. 43 (July 15, 2009); *see also* the Groton Wind Decision and Order holding that , "the turbines will not have an unreasonable adverse effect on the aesthetics of the region." *Decision Granting Certificate of Site and Facility with Conditions*, Docket No. 2010-01, p. 51 (May 6, 2011); *see also*, the prior Antrim Wind docket where the Subcommittee concluded that the project would have an "unreasonable adverse effect on the aesthetics of the region." *Decision and Order Denying Application for Certificate of Site and Facility,* Docket No. 2012-01, p. 51 (September 25, 2013). Most recently, the Committee held in its Order on the Joint Application of New England Power and Eversource that "the Project will not have an unreasonable adverse effect on the aesthetics of the region." *Decision and Order Granting Application for Certificate of Site and Facility*, Docket No. 2015-05 (October 4, 2016).

9, Attachment DR-1. LandWorks has used the methodology employed in conducting the VA for this Project over "a half a dozen times, in a number of different projects, and including wind projects in Maine." *Tr. Day 6/Morning Session*, p. 118.

First, LandWorks performed a comprehensive assessment of scenic resources within the project area using a wide range of sources. They also spent a significant amount of time visiting many of the 290 resources initially identified in order to get a sense for the region as a whole, the significance of these scenic resources within the context of the region, and the extent, nature and duration of public use of these resources, as required by the SEC rules. *LandWorks Visual Assessment*, App. Exh. 33, Appendix 9a, p. 2; *see also Tr. Day 4/Afternoon Session*, p. 148 (noting that LandWorks "field checked these resources.").

Second, after assessing the 290 resources initially identified in the VA, only 30 resources were determined to have potential for visibility, using industry standard techniques and software. *LandWorks Visual Assessment*, App. Exh. 33, Appendix 9a, p. 2, 92. Within the 353.2 square mile study area, only 8.8 square miles or 2.5% has potential visibility of the Project. *LandWorks Visual Assessment*, App. Exh. 33, Appendix 9a, p. 2, 92. In evaluating the scope and scale of change in the landscape, the new rules require the Subcommittee to consider "the extent to which 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." Site 301.14(a)(6). The limited visibility of this Project is significant and demonstrates that the Project in relation to the existing character of the landscape and resources is not dominant and from a holistic landscape perspective will not be an overly significant or dominant feature in the landscape. *David Raphael Prefiled Testimony*, App. Exh. 9, p. 14.

In addition to the limited overall visibility in the study area, the record shows that the average viewing distance of all resources with potential visibility will be 5 or more miles away from the Project, and typically 6 or more miles for sensitive resources, again minimizing the prominence of the Project viewed in context from any particular resource. *David Raphael Pre-Filed Testimony*, App. Exh. 9, p. 9; *see also LandWorks Visual Assessment*, App. Exh. 33, Appendix 9a, p. 2. The Project will not be a dominant or prominent feature within the natural or cultural landscape. *David Raphael Pre-Filed Testimony*, App. Exh. 9, p. 14. Also, the Applicant has virtually eliminated any nighttime visual affect (301.14 (a) (5)) through its commitment to employ an Aircraft Detection Lighting System ("ADLS"). The Applicant will employ ADLS and is currently waiting for the FAA to approve its application in order to install this technology.

The rules further require the Applicant to evaluate "the scope and scale of the change in the landscape visible from the affected scenic resources." Site 301.14(4). LandWorks concluded that given "the nature and experience of the landscape in the Project area…[the Project] will not substantively alter the visual qualities and character of that landscape, and thus cannot possibly seem out of scale." *David Raphael Prefiled Testimony*, App. Exh. 9, p. 15. As Mr. Raphael notes, from Willard Pond and Gregg Lake, "[t]heir presence in terms of visual ratio is nearly identical to that of the Lempster wind project as seen from parts of May Pond." *LandWorks Visual Assessment*, App. Exh. 33, Appendix 9a, p. 122; *see also* Exhibit 21: Visual Ratio Comparison. In contrast, Ms. Connelly noted that she did not evaluate the Project in comparison to other projects in New Hampshire. *Tr. Day 13/Morning Session*, p. 143. Rather than offer empirical analysis like Mr. Raphael, she simply observed that she "find[s] the scale of wind in mountainous regions troublesome." *Tr. Day 13/Morning Session*, p. 143.

Third, the 30 resources that had a view to the Project were analyzed for cultural designation and scenic quality to arrive at an overall sensitivity rating of each resource. Cultural designation was determined from a host of official websites, publications, online resources, local, regional, and state planning documents, and general knowledge garnered from spending time in the region. Scenic Quality was scored using standard BLM methodology. Of the 30 resources, 10 resources were found to have an overall Moderate-High sensitivity rating. Fourth, these 10 resources were then carefully analyzed to determine overall visual effect using industry accepted and intuitive ratings[19] on: number of turbines,[20] percent of visibility, proximity/distance, angle of view, prominence/dominance, and clutter/coherence. Lastly, only one of the 10 resources, Willard Pond, was found to have a Moderate-High overall visual effect, so Willard Pond was analyzed to determine the effect on the viewer, scoring the effect on activity, extent of use, duration of view, and remoteness.

The effect on the viewer at Willard Pond was determined to be Moderate. This comprehensive analysis, that started with 290 resources, shows that the Project will not have an unreasonable adverse effect on the aesthetics of the region and that there is also no single resource that rises to the level of unreasonable adverse effect. Of course a significant portion of the LandWorks VA, and Mr. Raphael's testimony before the Subcommittee, and other parties' testimony, centered on assessment of significant, affected scenic resources like Willard Pond, Bald Mountain, Goodhue Hill, and others. Regardless of Landworks' determination that none of

[19] Ms. Connelly asserts that "there is no way of knowing how [any] result was arrived at." *Counsel for the Public's Offer of Proof*, p. 7. Ms. Connelly fails to consider that all of the ratings in the LandWorks VA are qualitative. Each low, moderate, high rating is assigned a numerical value of 1,2, and 3, and the total points are based on mathematical values. There is no weighting of values or judgment. *See LandWorks Visual Assessment*, App. Exh. 33, Appendix 9a, p. 16, 29, 33.

[20] Ms. Connelly alleges that LandWorks evaluation of '[t]he number of turbines…is arbitrary and makes little sense to rate it alone as separate criteria." *Counsel for the Public's Offer of Proof*, p. 7. The method used by LandWorks in considering the number of turbines visible was developed by Dr. James Palmer and has been used and accepted in projects in Maine. *Tr. Day 4/Afternoon Session*, p. 154-55. It is not a methodology created by LandWorks expressly for this Project.

the resources evaluated rise to the level of statewide or national significance, *LandWorks Visual Assessment,* App. Exh. 33, Appendix 9a, p. 95, Landworks "conducted detailed analyses and several site visits to all resources with potential visibility in the vicinity of the Project – including several that were not ultimately part of the list of the final 10 resources included in the visual effect analysis." *LandWorks Visual Assessment,* App. Exh. 33, Appendix 9a, p. 114. Three examples are Meadow Marsh, Goodhue Hill and Bald Mountain:

Meadow Marsh: "The experience and use of this trail will not be significantly altered or changed by the project due to the low use of the resource, proximity to development and since most of the walk is within trees."

Goodhue Hill: "A typical hiker would likely be surprised at how inconsequential the Goodhue Hill experience and view is – the highlight of the walk is the summit forest and the initial walk around the Mill Pond. Quotes from several hiking blogs indicate the condition of activity on the trail: 'The summit area has been recently cleared and is a serious mess at the summit.'"

Bald Mountain: "The view toward the project is not the primary focal point. The main summit on Bald Mountain is the primary destination and stopping point, and the best place to picnic and view. The project is not visible from this location." *LandWorks Visual Assessment*, App. Exh. 33, Appendix 9a, p. 115,117,120.

LandWorks' conclusion that there will be no unreasonable adverse effect on any individual resources within the study area or on the regional landscape as a whole, *David Raphael Pre-Filed Testimony*, App. Exh. 9, p. 23-24, was based on a holistic review of the regional landscape, consistent with the standards set out in the newly adopted rules, as well as Mr. Raphael's extensive experience, and a clear, objective methodology that has been used many

times and accepted by several state administrative bodies. *Tr. Day 6/Morning Session*, p. 118. Based on this comprehensive review and the totality of evidence before the Subcommittee, the Applicant submits that this Project will not have an unreasonable adverse effect on aesthetics.

The Subcommittee also has before it an assessment prepared by Terraink. As discussed further below, there are serious concerns about the reliability of the Terraink VIA based, in part, on the following:

- Untested Methodology: The Terraink methodology is a new approach[21] that has never been used or accepted anywhere.[22] Ms. Connelly has never been the lead on an assessment like this[23] and has never testified in defense of her own VIA.[24]

- The analysis lacked an understanding of the region and the context of the sensitive resources: The majority of the rating panel members never visited the sites,[25] and had only limited information about the resources,[26] thus having no sense of the context of the resources.[27] The analysis therefore failed to address Site 301.14 regarding the "area of potential effect … the change in the landscape" or evaluate the overall effect of the Project on the region.

- The methodology violated important BLM protocols: The rating approach was based in large part on the United States Bureau of Land Management ("BLM") methodology[28] but departed in several key respects from that methodology including (1) the raters did not complete the ratings from in the field;[29] (2) the raters did not use multiple viewpoints to

[21] *Tr. Day 12/Morning and Afternoon Session*, p. 123-24.
[22] *Tr. Day 12/Morning and Afternoon Session*, p. 124.
[23] *Tr. Day 12/Morning and Afternoon Session*, p. 122-23.
[24] *Tr. Day 12/Morning and Afternoon Session*, p. 124.
[25] *Tr. Day 13/Morning Session*, p. 26-27 (Ms. Connelly noted that "we did not evaluate several viewpoints of one particular sensitive side [sic].")
[26] *Tr. Day 12/Morning and Afternoon Session,* p. 114-15 ("they had the before and after photos with the visual simulations of each of the 14 points…They had the set of forms…and they had a set of…sensitive site and viewpoint location maps which they could refer to.")
[27] In fact, Ms. Connelly specifically stated that "We're not rating views that don't have view to the project. We're rating the view to the project. So no they would not have these notes," which discuss the lack of visibility from various places at key resources. *Tr. Day 13/Morning Session,* p. 38. *See also Tr. Day 13/Morning Session,* p. 42 (When asked, "So again, your view panel members didn't have any appreciation of that context, did they? You didn't communicate things like that to them," Ms. Connelly responded "No, because there again we're looking at the view to the project.")
[28] *Tr. Day 12/Morning and Afternoon Session*, p. 118-19; *Tr. Day 12/Morning and Afternoon Session*, p. 125 (Ms. Connelly responded in the affirmative to the statement that she "drew heavily on the BLM methodology because it…felt more natural both in academic studies and professional experience.")
[29] *BLM Manual 8431*, App. Exh. 59, p. 3 ("The actual rating should be completed in the field from the KOP(s)."); *see also Tr. Day 6/Morning Session*, p. 148. (Quoting from BLM guidance, Mr. Raphael noted that "the actual rating should be completed in the field from the KOPs, which is key observation points."); *see also Tr. Day 13/Morning Session*, p. 124 (Noting that "two of the three didn't visit the site.") In contrast to BLM's recommendation of

assess the sites[30] despite the fact that the BLM methodology explicitly requires consideration of multiple viewpoints[31] (in order to appreciate overall context).

- Untested Rating Sheets: The rating sheets the panel employed here have never been used before[32] and were not peer-reviewed beforehand.[33] This led to significant methodological errors and an extremely biased result:

    - The sensitivity analysis in Ms. Connelly's newly developed rating sheet (1) dramatically skewed the scale to the high side;[34] (2) greatly overemphasized users,[35] especially in relation to BLM's approach;[36] (3) created overlap among user categories that likely caused double counting;[37] (4) raters had no consistent

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completing ratings from the field, Ms. Connelly actually stated that "in many ways I prefer that [the raters are] not at the sites [as] it limits bias." *Tr. Day 13/Morning Session*, p. 152.

[30] *Tr. Day 13/Morning Session*, p. 28 (Ms. Connelly was asked "for all six of the key resources we're looking at here, your rating panel member looked at them from a single viewpoint, is that correct?" In responses Ms. Connelly stated "Yes, again because we're looking at worst case effect and exposure.")

[31] *BLM Manual 8410-1*, App. Exh. 60, p. 4 ("Evaluate each SQRU [Scenic Quality Rating Unit] by observing the area from several important viewpoints.")

[32] *Tr. Day 12/Morning and Afternoon Session*, p. 123.

[33] When asked by Chairmen Scott if the rating form had been "peer reviewed" before using it for this Project, Ms. Connelly stated "it didn't go through a formal process, no." *Tr. Day 13/Morning Session*, p. 159. In addition, when asked if she had done a "trial test" with the rating form, Ms. Connelly responded, "No, I did not." *Tr. Day 13/Morning Session*, p. 159.

[34] *See* App. Exh. 62 (showing that the Terraink sensitivity scale distribution is skewed such that 4.8% of potential ratings equal low and 47.6% of potential ratings equal moderate and 47.6% of potential ratings equal high.); *see also Tr. Day 13/Morning Session*, p. 50. (When presented with the statement that "the distribution that you set up here has five at under five percent [for a low rating] and then the others [moderate and high rating] at 47 percent," Ms. Connelly responded "[t]hat's how the raters rated the project, yes.") Further, Ms. Connelly was unaware of the effect of this scaling issue prior to giving testimony on November 7, 2016. *See also Tr. Day 13/Morning Session*, p.111 ("did you understand that the percentages were going to fall into these categories?" "I did not run a rating scale average distribution, no.")

[35] *Tr. Day 13/Morning Session*, p. 60 (When asked "[o]n your chart, you have user as three of five categories, correct," Ms. Connelly stated in the affirmative.) *See* App. Exh. 58, Terraink VIA Jade Rating Form, p. 2. Ms. Connelly was further asked "so you thought it was appropriate in this new methodology you've created to place a very heavy emphasis on sensitivity on users. Sixty percent of it focuses on users." Ms. Connelly responded "that has been my experience on the forms that I had used in my work with EDR." *Tr. Day 13/Morning Session*, p. 62. When Ms. Connelly was asked about her work at EDR, however, Ms. Connelly confirmed substantial distinctions between her new methodology and EDR's methodology. *Tr. Day 12/Morning Session*, p. 124-128. For example, Ms. Connelly confirmed that her methodology "drew heavily on the BLM methodology" while "EDR process actually draws heavily from the Army Corps of Engineers methodology." *Tr. Day 12/Morning Session*, p. 125. Ms. Connelly further confirmed that "with respect to viewer type, [she] did a modified BLM assessment…that was also quantitative whereas EDR, again, used a descriptive approach." *Tr. Day 12/Morning Session*, p. 127. When asked specifically about user categories, Ms. Connelly confirmed that EDR does not "break [users] out among these various categories…the way [Ms. Connelly] did. They actually do it the way BLM does it with a single user category." *Tr. Day 13/Morning Session*, p. 78.

[36] On the BLM chart, the BLM makes "type of user one of six categories." *Tr. Day 13/Morning Session*, p. 61; *see also* App. Exh. 60, p. 4.

[37] *Tr. Day 13/Morning Session*, p. 63; *see also Terraink Visual Impact Assessment*, CFP Exh. 1, p. 23. Terraink breaks out the category of user into three distinct groups – local/resident, commuter, and recreational users. Under the definition of recreational users Terraink states "Recreational users is a broad category including local residents, regional users, and tourist." CFP Exh. 1, p. 23. Nowhere in the VIA does Terraink explain how rating panel members are supposed to account for this overlap in their assessment and consideration of users. For example, as

guidance or empirical basis for rating users;[38] and (5) on its face, employed an approach to commuters that made no sense in context of a project like this.[39]

- Ms. Connelly's newly developed contrast rating sheet departed significantly from the BLM contrast rating sheet[40] and methodology because BLM only focuses on the physical changes to the resource;[41] Ms. Connelly included ratings for users and special areas[42] which did not fit within the contrast category and had no basis in the BLM methodology or any other methodology she could point to;[43] Ms. Connelly further provided no basis for raters to determine contrast associated with the surrounding special areas, or sensitive sites, within the rating packets available to them.[44] The raters were given no information about actual visibility of the Project from the surrounding sensitive sites, [45] and in fact Ms. Connelly admitted that even though the raters were making specific judgments about the impact on special areas, *they had no idea whether these areas had any view of the project*.[46]

- Improper sites used and evaluated: Ms. Connelly improperly included White Birch Point as a scenic resource even though the entire historic district is a place where the public does not have a legal right of access.[47] Additionally, Ms. Connelly conducted the visual assessment of Black Pond from a location where the public does not have a legal right of

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Mr. Forbes noted, it is unclear how Ms. Connelly's methodology intends to distinguish between residential and recreational users at a lake "that may just have recreational users." This distinction may be more understandable if the project area involved "a pond or a lake that had users purely recreational versus one might have houses on it." This is not the case here, however, and Ms. Connelly does not explain how these user groups should be distinguished. *Tr. Day 13/Morning Session*, p. 124-25.

[38] *Tr. Day 13/Morning Session*, p. 65-66.

[39] *See* App. Exh. 53, p. 238 (Ms. Cummings rated the effect on commuters at Bald Mountain as 1.5); *see also* App. Exh. 53, p. 259 (Ms. Gavitt rated the effect on commuters from the White Birch Point Historic District as 2).

[40] *See* App. Exh. 58, p. 2 as compared to *Manual 8431*, App. Exh. 59, p. 7.

[41] *Tr. Day 13/Morning Session*, p. 80 (In discussing the BLM form, Ms. Connelly agreed that "what they're doing there is they're comparing features, landscape features with those various elements to come up with a degree of contrast."); *see also Manual 8431*, App. Exh. 59, p. 7.

[42] *See* App. Exh. 58, p. 2; *see also See Tr. Day 13/Morning Session*, p. 80.

[43] *See Tr. Day 13/Morning Session*, p. 86-91.

[44] *Tr. Day 13/Morning Session*, p. 92 (Rating panel members "did not have the viewshed maps." Ms. Connelly's only response was that the raters based their contrast rating on "their understanding of what was an adjacency, what was special about this area, and how those things are contrasting how they're changed by the employment of this project in place.")

[45] *Tr. Day 13/Morning Session*, p. 92-93. (Ms. Connelly was asked "all they knew was visibility from one viewpoint you gave them, correct?" Ms. Connelly responded "Yes. They would not, we did not do view visual simulations for all locations.")

[46] *Tr. Day 13/Morning Session*, p. 92-93 ("So they actually had no idea whether these special areas would have visibility of the project." "Yes, They would not, we did not do view visual simulations for all locations.")

[47] *See Application*, App. 33, Appendix 9(f), p. 46 (Illustrating that the entire White Birch Point Area is private property.) When asked about White Birch Point and whether the water was public, "but the boundaries are private," Ms. Connelly answered, "Correct." *Tr. Day 13/Morning Session*, p. 137; *see also Tr. Day 12/Morning Session*, p. 141 (Discussing Ms. Connelly's simulation from White Birch Point, Ms. Connelly was asked "why was it from a water view? Why didn't you do it from inside the historic district?" Ms. Connelly responded "I was not able to contact the property owners in a timely enough fashion to get access to the land." In response, Ms. Connelly was asked, "In other words, you didn't have a legal right of access…is that right?" To which Ms. Connelly responded, "Correct.")

access.[48] Further, Ms. Connelly included a visual simulation from Liberty Farm Road that takes in views from private residences.[49]

- Ms. Connelly derived an "overall contrast rating" for the area of 14.65.[50] In fact, this was not really an overall area rating and distorts the true effect of the Project in the study area because she only focused on the 14 resources, taking out the highest and lowest rating, then averaging the remaining 12 resources[51] instead of considering the fact that only a tiny percentage, 2.5%,[52] of scenic resources in the study area will have any visibility of the project.

- Final conclusion not explained or justified: Ms. Connelly's overall ratings on page 56 of her VIA still remains unclear and contains substantial unexplained inconsistencies. Ms. Connelly's methodology in her VIA contains no explanation for how she derived the overall ratings and she could not explain this critical point at the technical session.[53] Ms. Connelly created a rationale for her overall rating *after* she was criticized at the technical session and by Mr. Raphael in his supplemental testimony.[54]

    - The after-the-fact rationale is inexplicably inconsistent with the Terraink VIA because in her VIA at the bottom of page 55, and in the chart on page 56, she unequivocally included ROS as part of the overall ratings on page 56 but then in her subsequent chart, she did not include those in reaching her overall conclusions.[55] Even as of now, considering all the points cited here, it is

[48] *See Supplement to Application re: New Rules*, App. Exh. 34, Attachment 4, Private Property Winter Visual Simulations (Identified as "Existing Conditions from Private Camp"); s*ee also, Terraink Visual Impact Assessment,* CFP Exh. 1, Viewpoint 19; *see also Tr. Day 12/Morning Session,* p. 149-50 (Ms. Connelly first agreed with the statement made by Mr. Cleland earlier in the proceeding that the summer camp is private property. Ms. Connelly was then asked "If I go set up my beach chair by the amphitheater, doesn't somebody who owns that property have a right to come and tell me to leave?" Ms. Connelly responded "If you're there without permission, yes.").

[49] *David Raphael Supplemental Testimony*, App. Exh. 23, p. 7. (Counsel for the Public alleges that the visual simulation for Liberty Farm Road was taken from a public ATV trailhead and notes that "[i]t was the only point in Loveren's Mill Cedar Swamp that had visibility of the project." *Counsel for the Public's Offer of Proof*, p.1. It is unclear, however, how this could be correct since Loveren's Mill Cedar Swamp is not near the location of the Liberty Farm Road visual simulation. Further, Ms. Connelly's assertion that it was the only point in Loveren's Mill Cedar Swamp with visibility of the project demonstrates that the Project will not be visible from this scenic resource and is only visible from the road.

[50] *See* App. Exh. 68.

[51] *See* App. Exh. 69.

[52] *LandWorks Visual Assessment*, App. Exh. 33, Appendix 9a, p. 2.

[53] *Tr. Day 13/Morning Session*, p. 99; *see also Terraink Visual Impact Assessment,* CFP Exh. 1. There is no place in the Terraink VIA in which Ms. Connelly explains how the overall rating contained on p.56 was derived.

[54] *Tr. Day 13/Morning Session*, p. 102 (In response to whether the rationale for the overall ratings was created after Mr. Raphael prepared his supplemental testimony, Ms. Connelly admitted that "the formality of this document was in response to the criticism, yes.")

[55] *See* App. Exh. 55, Table 5; *and see* App. Exh. 68 (Both charts include ROS, but ROS is not included in the overall Average column that results in Ms. Connelly's overall rating.) *Tr. Day 13/Morning Session*, p. 105-06 (Ms. Connelly noted that, after using her new methodology for the first time and receiving criticism on it, ROS "is something that in the future tables I would move out since it is not part of the numerical averaging and I think it's confusing."); *see also Terraink Visual Impact Assessment,* CFP Exh. 1, p. 55, which states "Using the rating panel results from the categories of Scenic Quality, Sensitivity Level, Resource Contrast and Proposed ROS a determination of the potential impact from the wind turbine installation can be estimated for each viewpoint." Yet

impossible to reconcile her statements regarding the use of ROS in her methodology.

- During the technical session Ms. Connelly stated that she weighted sensitivity and contrast more heavily (under cross examination, Ms. Connelly could not recall stating that, but did not deny it).[56] However, in her September 7 chart,[57] which she admitted was produced after-the-fact,[58] no such weightings are present.[59]

- The scale Ms. Connelly used in her after-the-fact explanation of her final rating chart on page 56 of the VIA to derive overall ratings is also skewed to the high side, thus distorting the overall visual effects.[60]

In addition to these significant issues, another very substantial flaw in Ms. Connelly's methodology was her reliance on a worst case analysis to assess scenic resources. Worst case analysis is not called for by SEC regulations and, is in fact, inconsistent with both those regulations and the BLM methodology.[61]

When asked whether the SEC regulations require a "worst-case analysis," Ms. Connelly could not point to anyplace in the rules that supported such an approach. *Tr. Day 13/Morning Session*, p. 29-30. Rather, she evaded the question and only noted that photo simulations should be taken from representative key observation points for which the potential visual impacts are characterized as high. *See Tr. Day 13/Morning Session*, p. 30. Ms. Connelly failed to take into account that the rules also require evaluation of "the landscape surrounding the proposed facility," and the evaluation of a 10-mile radius area of potential visual impact. Site 301.05. The rules further require the Committee to consider "the existing character of the area of potential visual impact" as well as "the scope and scale of the change in the landscape." Site 301.14 (a).

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despite this statement, which suggests that ROS is part of the overall rating, Ms. Connelly subsequently stated that "ROS is considered as sort of a qualifier…It's not part of the numerical averaging." *Tr. Day 13/Morning Session*, p. 106-07.

[56] *Tr. Day 13/Morning Session*, p. 104.

[57] App. Exh. 68.

[58] *See supra* footnote 54.

[59] *See* App. Exh. 68.

[60] *See* App. Exh. 69.

[61] *See* App. Exh. 60, p. 4 ("Evaluate each SQRU by observing the area from several important viewpoints.").

In contrast, Ms. Connelly noted that Mr. Raphael, when completing his VA, he was "not looking at the worst-case scenario from a viewpoint but rather looking at the resource as a whole." *Tr. Day 13/Morning Session*, p. 43. As further noted by the Subcommittee, Ms. Connelly's "analysis uses the worst case scenario whereas Mr. Raphael's analysis used the analysis of a typical day with a typical viewer." *Tr. Day 13/Morning Session*, p. 139. As further noted by Ms. Weathersby, "a worst case doesn't happen that often…It's not typical, and our rules talk about typical viewers." *Tr. Day 13/Morning Session*, p. 140-41.[62]

The Applicant does not dispute that SEC regulations require – and general practice dictates -- that photo-simulations should represent worst case for the scenic resource. But the SEC rules require visual assessment to be completed in a holistic manner and require an evaluation and understanding of the "scenic quality of the landscape" in addition to an evaluation of scenic resources. *See* Site 301.05(b). Despite Ms. Connelly's statement that "first and foremost, you should be looking at what are the regs of the state that you're working in," Ms. Connelly does not appear to have properly conducted her assessment in the holistic manner contemplated by the SEC rules. *Tr. Day 13/Morning Session*, p. 157. Terraink's focus on "worst case" photosimulations further distorts the ratings given and does not accurately describe the effect of the Project on the region, as contemplated by the rules.

[62] The SEC rules require a visual assessment to consider "the expectation of the typical viewer." Site 301.05(b)(6). In addition to relying on worst case, Ms. Connelly also asserts that she did account for typical users "using the categories of the Recreational Opportunity Spectrum." *Counsel for the Public's Offer of Proof*, p.2. ROS is not an appropriate tool to determine how the experience of the typical viewer will be affected. ROS is a tool "designed to provide management guidance to the Forest Service relative to their particular management class and the use of that area of a forest." *Tr. Day 6/Morning Session*, p. 106. It is not intended to establish how a resource is currently used or how a project will affect that use.

Lastly, Terraink's entire assessment and methodology relies almost exclusively on rating panel members' review of scenic resources based on one, "worst case," visual simulation.[63] While Ms. Connelly did visit the scenic resources in person, the other two members of the rating panel team did not visit a single resource and solely relied on the information provided in the rating packet to evaluate the resources. *Tr. Day 13/Morning Session*, p. 26. Terraink's assessment made no effort to consider the regional viewshed, the significance of affected resources, the extent of use or the overall visual impacts, as required by the SEC rules. *See* Site 301.14 (a)(1) – (7). Nor did it provide raters with the proper tools and information to allow them to consider the context in which the Project would be viewed from the various scenic resources identified and evaluated.[64]

In summary, Ms. Connelly created a new, untested methodology that generated unreliable and biased results. The rating system has numerous methodological flaws. For example, for several key components, the rating scales are skewed to the high side. *See* App. Exh. 62, App. Exh. 69. By creating a methodology that ultimately yields skewed results, Ms. Connelly created high ratings that would not, under normal distribution, be achieved. *See* App. Exh. 65, App. Exh. 73. When the rating scales are evenly distributed, the result is that all of the ratings, for which Ms. Connelly received a rating of high, drop to a rating of moderate. Additionally, Ms. Connelly's effort to factor users into her assessment of scenic resources, resulted in a confusing description that is highly susceptible to double counting and over emphasis. *See supra* p. 34. Based on an objective effort by the Applicant to undue double counting and correct skewed distribution, Terraink's rating would drop and show that there are no unreasonably adverse

[63] *Tr. Day 13/Morning Session*, p. 28. ("in fact, for all six of the key resources we're looking at here, your rating panel member looked at them from a single viewpoint, is that correct?...Yes. Again, because we're looking at worst case effect and exposure.")
[64] *See* App. Exh. 61; *see also Tr. Day 13/Morning Session*, p. 38-39.

effects to any of the resources identified. *See* App. Exh. 66 and App. Exh. 67. While the Applicant concedes that there may be more than one way to make these adjustments, this fact further supports the Applicant's view that Terraink's methodology is not capable of being repeated and the results obtained are unreliable.

Ms. Connelly fails to draw a distinction between a finding of high visual impact and an unreasonable adverse effect, as described and required in the rules. Site 301.14. Rather, Ms. Connelly agreed that it is "possible to have a high visual impact…and not have an unreasonable impact." *Tr. Day 13/Morning Session*, p. 159. Ms. Connelly noted that because such a result is possible, it is "important to look at the collective." *Tr. Day 13/Morning Session*, p. 159. Ms. Connelly did not however, consider the region as a whole. The Terraink VIA does not take into account the limited visibility of the Project within the overall project area, or the lack of visibility from over 200 other scenic resources identified. *LandWorks Visual Assessment*, App. Exh. 33, Appendix 9a, p. 2. Rather, the conclusions rely exclusively on the evaluation of visual simulations without sufficient information to provide proper context.

The LandWorks VA submitted in this docket demonstrates that the Project will not have an unreasonable adverse effect on aesthetics. This conclusion is based on LandWorks well-tested, accepted methodology that takes into account the potential effect of the Project on the regional landscape as well as specifically identified scenic resources within that landscape. LandWorks concluded, based on extensive field work and observation of users at many of the resources identified, that users will continue to use and enjoy the resources within the viewshed area and that the Project will not dominate the views from these significant resources.

After extensive research, analysis and time spent in the region David Raphael came to the conclusion that "the recreational activities and the use and enjoyment of that pond will continue

after this project is built and people will continue to enjoy the fishing, will continue to enjoy the paddling and don't need to go anywhere else." (*Tr. Day 4/Afternoon Session*, p. 167) Further, Mr. Raphael concluded "[o]verall, the new Project fits well within the topography of the region, and vegetation hides it from most locations." *see also LandWorks Visual Assessment*, App. Exh. 33, Appendix 9a, p. 2. Landwork's understanding of how the Project will fit into the region and the landscape is not only informed by Mr. Raphael's many years of work in this area, but his analysis also has the benefit of data illustrating how the Lempster project was received and accepted as part of the landscape. Quoting from the New Hampshire State Parks blog: "Our campsite rested on the banks of May pond, one of four small bodies of water …. On the western slope, the hills are dotted with windmills, adding a modern yet unobtrusive aspect to the view." And quoting from Yelp "I was mesmerized by the wind farm on the ridge, which I feel does not take away from the view at all. … Quiet. Great place to kayak." *LandWorks Visual Assessment*, App. Exh. 33, Appendix 9a, p. 103-104. While Landworks and Mr. Raphael acknowledge, that there will be a "change in visual qualities…the change wouldn't be so dramatic and so great that it would undermine…the continued use and enjoyment of that resource." *Tr. Day 6/Morning Session*, p. 124-25.

Site 301.14(a)(7) requires the Subcommittee to consider the effectiveness of the measures proposed to avoid, minimize, or mitigate potential adverse effects. The Project has been carefully sited, at a location with an excellent wind resource, in order to avoid and minimize potential impacts. The current Project began with a concerted effort to address concerns raised in the prior Antrim Wind docket and has been designed to avoid and minimize visibility to less than three percent of the overall viewshed area, and to avoid and minimize the effect on wildlife and the natural environment with a small overall project footprint. The Applicant removed

turbine 10 and shortened the remaining turbines, eliminating more than 10% of the overall Project footprint from the prior project design. These changes eliminate the effect of turbine 10, critically at issue in the prior docket, and therefore minimize the overall effect of the Project, particularly on Willard Pond.[65]

In addition to avoidance and minimization efforts incorporated into the Project design, the Applicant has also included in the Application a robust mitigation package. *See Application*, App. Exh. 33, Appendix 10. In 2013, BLM published additional Best Management Practices for Reducing Visual Impacts specifically associated with renewable energy facilities. *See David Raphael Supplemental Testimony*, App. Exh. 23, p. 20 (Referencing BLM 2013 Guidance). The Antrim Wind Project has already incorporated many of the recommended mitigation strategies into its Project proposal.[66] Ms. Connelly does not consider any of the proposed mitigation identified by the BLM specifically for renewable energy facilities, rather she relies on and her raters only considered mitigation recommended in the "decades old BLM VRM methodology," which is not directly applicable to wind. *David Raphael Supplemental Testimony*, App. Exh. 23, p. 20.

[65] *See Tr. Day 8/Afternoon Session*, p. 143 (Ms. Von Mertens from NH Audubon noted that "it was very good news when turbine 10 was removed in terms of that very large glacial boulder."); *see also Tr. Day 9/Afternoon Session*, p. 143 (Mr. Henninger noted that the removal of turbine 10 "affects Willard Pond more than anything. The view from Willard Pond is what is affected by the removal of that Turbine 10.")

[66] *See David Raphael Supplemental Testimony*, App. Exh. 23, p. 20-21. The mitigation strategies recommended by BLM include: (1) Incorporating stakeholder input during the siting process - AWE has engaged in extensively over the past 7 years; (2) being sensitive to and responding to topography when siting wind turbines – the Project requires limited alteration of existing topography and is sited on hill tops that are broad and more amenable for roads; (3) clustering or grouping turbines to break up long lines of turbines – the Project is small in size compared to other projects in the State; (4) creating visual order and unity among turbine clusters – the single string for this Project is generally uniform and orderly when viewed from most scenic resources; (5) site wind turbines to minimize shadow flicker – the Project will adhere to the strictest shadow flicker requirements in the country; (5) using Audio Visual Warning System (AVWS) technology to reduce night sky impacts – the Project will use radar activated lighting to minimize night time sky impacts; (6) creating visual uniformity in shape, color, and size – all turbines are the same model and color, turbine 9 is shorter in order to reduce visibility from nearby resources; (7) using fewer, larger turbines - *AWE's 9-turbine project features 28.8 MW of capacity vs. the older Lempster project, which features 12 turbines (33% more) and only 24 MW of capacity (15% less).*

In addition to the BLM criteria discussed by Mr. Raphael and incorporated into the Project, Ms. Connelly also disagreed with the BLM recommendation of using offsite mitigation.[67] The Applicant has committed over $100,000 for off-site mitigation to the New England Forestry Foundation for off-site land conservation. *See Jack Kenworthy Prefiled Testimony*, App Exh. 10, p. 19-20. In addition, the Applicant has agreed to provide $40,000 to the Town of Antrim for recreational enhancements at Gregg Lake Beach. *See Jack Kenworthy Prefiled Testimony*, App Exh. 10, p. 14. Additionally, the Project will conserve 908 acres of land, include 602 acres of Tier 1. *Valleau/Gravel Supplemental Testimony*, App. Exh. 22, p. 4-5; *see also Tr. Day 2/Afternoon Session*, p. 149. habitat. These benefits are significant and are consistent with past practice in New Hampshire and were ignored by Terraink in its evaluation of the Project.[68] Given the substantial efforts taken by the Applicant through the development of this Project to avoid and minimize impacts where possible and the additional mitigation measures proposed, the evidence before the Committee supports a finding that these proposed strategies are effective and represent best practical measures.

[67] *See David Raphael Supplemental Testimony*, App. Exh. 23, p. 22; *see also Tr. Day 12/Morning*, p. 132. Counsel for the Public again reinforces this disagreement in her Offer of Proof noting that "As for off-site mitigation, Ms. Connelly would testify that although the BLM indicates that off-site conservation land is a possible option, it is low on its list of off-site options." *Counsel for the Public's Offer of Proof*, p. 11. BLM does not rate mitigation options from low to high, so it is not clear what authority Ms. Connelly is relying on to say that off-site mitigation "is low on the list." In fact BLM cautions there is not one mitigation option, but a combination of options that are appropriate, and are project appropriate. *Best Management Practices for Reducing Visual Impacts of Renewable Energy Facilities on BLM Administered Land*, p. 5 (2013). Further, BLM specifically says "Offsite mitigation serves as a means to offset a loss of visual landscape integrity. For example, offsite mitigation could include reclaiming unnecessary roads, removing abandoned buildings, reclaiming abandoned mine sites, putting utility lines underground, rehabilitating and revegetating existing erosion or disturbed areas, ***or establishing scenic conservation easements.***" *Best Management Practices for Reducing Visual Impacts of Renewable Energy Facilities on BLM Administered Land*, p. 138 (2013). While Counsel for the Public notes the first several purposes for offsite mitigation in her offer of proof, she neglects to include establishing scenic conservation easements, which is the purpose for the proposed mitigation being evaluated for this Project.

[68] *See Counsel for the Public's Post Hearing Memorandum*, Docket No. 2008-04, App. Exh. 56, p. 4 (April 10, 2009)(Public Counsel recommended that the applicant be required to contribute funds to Coos County and the Department of Resources and Economic Development for eco-tourism development.)

2. Archeological and Historic Sites

The Applicant has provided the uncontroverted expert testimony of Dr. Richard Will and Mr. Russell Stevenson that the Project will not have an unreasonable adverse effect on archaeological or historic resources within the project area. *See Richard Will and Russell Stevenson Prefiled Testimony*, App. Exh. 5. In the prior 2012 docket, the Committee "unanimously indicated that the Project would not have an unreasonable adverse effect on historic sites." *Decision and Order Denying Application for Certificate of Site and Facility*, Docket No. 2012-01, p. 57 (April 25, 2013). Since the prior docket, the evidence before the Subcommittee has only been strengthened and has reaffirmed the prior conclusions.

The Applicant completed both Phase 1A and Phase 1B surveys with respect to archeological conditions in 2012. The changes proposed for the Project did not warrant additional archaeological review because the proposed footprint of the Project has only decreased in size since the prior docket. *See Richard Will and Russell Stevenson Prefiled Testimony,* App. Exh. 5, p. 5. The Phase 1A survey indicated that no historic period or pre-contact archeological sites were within the Project's boundaries or within 10 kilometers of the Project that have previously been documented. *Richard Will and Russell Stevenson Prefiled Testimony,* App. Exh. 5, p. 6. During the Phase IB Survey walkover, no landforms suitable for Pre-contact period subsurface testing were observed. *Richard Will and Russell Stevenson Prefiled Testimony*, App. Exh. 5, p. 6. The New Hampshire Department of Historical Resources ("NHDHR") has reviewed the work completed and agreed with the recommendations and conclusions in the Phase I report. *See Application* App. Exh. 33, Appendix 9C, *NHDHR Phase I Concurrence Letter*.

With respect to historic structures, the Project requires a permit from the U.S. Army Corp of Engineers ("USACE") under the Section 106 process. *See Richard Will and Russell Stevenson Prefiled Testimony,* App. Exh. 5, p. 8. USACE is the lead agency for purposes of the Section 106 review process, in consultation with NHDHR. In total, five assessment of effects packages were prepared for the Project and submitted to NHDHR. The Applicant received a final determination from the USACE concluding that there will be no unreasonable adverse effect on any of the historic resources within the jurisdictional area USACE was required to review, including the White Birch Historic District. *Tr. Day 6/Afternoon Session*, p. 23-24.

Under Section 106, no mitigation measures were required as USACE maintained that there will be no impacts to White Birch Point or any other historic sites. *Tr. Day 6/Afternoon Session*, p. 14-15. The NHDHR disagreed with USACE's conclusion with respect to its assessment of the White Birch Point Historic District. Therefore, the Applicant engaged in discussion and consultation with NHDHR to address its concerns relating to the White Birch Point Historic District. *Tr. Day 6/Afternoon Session*, p. 15. The Applicant and NHDHR subsequently entered into a Memorandum of Understanding resolving NHDHR's concerns. *See DHR Letter of Final Decision,* App. Exh. 25; *see also NHDHR MOU Fully Executed,* App. Exh. 26. Based on the foregoing, the evidence before the Subcommittee supports a finding that the Project will not have an unreasonable adverse effect on archeological or historical resources.

3. <u>Water Quality and Air Quality</u>

As in the 2012 Antrim Docket, the evidence before the Subcommittee supports a finding that there will be no unreasonable adverse effect on air or water quality. *Decision and Order Denying Application for Certificate of Site and Facility,* Docket No. 2012-01, p. 58 (April 25, 2013) (Holding that "regarding water quality, potential concerns are adequately address in the

three recommended permits issued by the Department of Environmental Services."). The Committee has consistently found that wind projects will not have an unreasonable adverse effect on air quality because these projects will not create air emissions. *Decision Granting a Certificate of Site and Facility,* Docket No. 2010-01, p. 58 (May 6, 2011). Rather, the Project will reduce emissions, while providing enough clean energy to meet the annual energy consumption needs of approximately 12,300 average New Hampshire homes. *Application*, App. Exh. ES-3 – 4. The undisputed evidence before the Subcommittee demonstrates that "[t]here is no concern that the Facility will have an adverse effect on air quality." *Decision and Order Denying Application for Certificate of Site and Facility,* Docket No. 2012-01, p. 58 (April 25, 2013).

With respect to water quality concerns, the Applicant has submitted the Alteration of Terrain Permit and §401 Water Quality Certification Application; the Wetlands Permit Application; and the Subsurface Systems Permit Application to the Department of Environmental Services ("DES"). *See Application*, App. Exh. 33, Appendix 2a, Appendix 2b, Appendix 2c, and Appendix 2f. The Project site straddles three watersheds; the North Brank River, Franklin Pierce Lake, and Gregg Lake. The removal of Turbine 10 has taken the Project out of the Willard Pond watershed. *See Application,* App. Exh. 33, p. 81-82. The Project is expected to have minimal impact on wetlands in the area, totaling only 0.22 acres of permanent wetland impact. *Valleau/Gravel Prefiled Testimony,* App. Exh. 7, p. 18. This minimal impact is the result of "careful planning and design to avoid and minimize impacts." *Valleau/Gravel Prefiled Testimony,* App. Exh. 7, p. 18. DES has conducted a technical review of each of AWE's applications and has recommended approval, subject to certain conditions. *See DES*

Final Decision and Conditions, App. Exh. 32. The Applicant has worked with DES throughout this review process and has agreed to its proposed conditions.

Some of the parties in this docket have expressed concerns regarding the potential effect of blasting activity on wells and drinking water in the area. The Applicant will perform all blasting in strict conformity with a Project blasting plan, which will be provided to the Town of Antrim, and which will be reviewed and approved by the New Hampshire Department of Safety. *See Application*, App. Exh. 33, p. 32. The DES has developed a set of Best Management Practices titled "Rock Blasting and Water Quality Measures That Can Be Taken To Protect Water Quality and Mitigate Impacts." The Best Management Practices will be incorporated into the Blasting Plan developed by the Applicant and blasting contractor. *Application*, App. Exh. 33, p. 82. In addition, the Applicant, in consultation with DES, has agreed to perform testing on any wells that are within 2,000 feet of any blasting activity, in the event that the Project requires more than 5,000 cubic yards of blasting, which is anticipated. *Tr. Day 1, Afternoon Session*, p. 202-03. Based on the evidence in the record, the Project will not have an unreasonable adverse effect on air and water quality.

4. <u>Natural Environment</u>

The Applicant submitted substantial evidence demonstrating that it has appropriately studied the Project's potential effects on the natural environment as it relates to birds and bats, wildlife, wildlife habitat, and plants and natural communities. The Applicant worked closely in consultation with U.S. Fish & Wildlife ("USF&W"), the New Hampshire Natural Heritage Bureau ("NHNHB"), and New Hampshire Fish & Game ("NHF&G") throughout this process. Consistent with standard practice, after consulting with the agencies, the Applicant completed all the studies the State and federal agencies requested with respect to potential effects on wildlife

and habitat. *Tr. Day 2/Afternoon Session*, p. 95 ("We followed the guidance of the agencies on what surveys they're interested in."); *see also Tr. Day 2/Afternoon Session*, p. 146-47. In addition to completing all studies requested and required by the agencies, Mr. Valleau and Mr. Gravel went beyond what was required, and completed additional studies. *Tr. Day 2/Afternoon Session*, p. 154-55. For example, Mr. Gravel noted that in the case of northern long-eared bats, given the effect that white nose syndrome has had on the population, he felt it was necessary "to do additional bat work beyond our typical acoustical work." *Tr. Day 2/Afternoon Session*, p. 155.

The Applicant has worked with regulators on an ongoing basis, and will continue to do so during construction and post-construction. As part of that effort, AWE executed a Memorandum of Understanding with NHF&G and New Hampshire Audubon to address concerns regarding the State endangered Common Nighthawk. *Tr. Day 5/Afternoon Session*, p. 65. In addition, all of the conditions proposed by the SEC in the prior docket as well as by other agencies, were incorporated into the Application as part of the mitigation strategy for wildlife and the natural environment. *See Valleau/Gravel Prefiled Testimony*, App. Exh. 7, p. 8. The Bird and Bat Conservation Strategy ("BBCS") proposed for this Project is unprecedented in the State and the region. Mr. Gravel, who has worked on many, if not all, of the wind project in the region testified that the proposed BBCS is "the best plan out there today." *Tr. Day 2/Afternoon Session*, p. 143. Rather than set specific requirements ahead of time, the BBCS is intended to promote adaptive management which allows for uncertainty and enables the Project to adjust operations and monitoring based on what is actually found on site. *Tr. Day 2/Afternoon Session*, p. 143. In addition, as part of the BBCS, and in response to conditions proposed by the SEC in the prior docket, the Applicant has agreed to a two phase process for monitoring invasive species. The

BBCS provides for monitoring and best practices during construction and the Applicant has further committed to three years of post-construction monitoring for any invasive species. *Tr. Day 2/Afternoon Session*, p. 135; *Valleau/Gravel Prefiled Testimony,* App. Exh. 7, p. 8; *see also Application*, App. Exh. 33, Appendix 12f, *BBCS*, p. 49.

As noted above, there has been discussion throughout this process regarding conservation efforts in the region, including the Quabbin to Cardigan Partnership (the "Partnership"), and the potential effect of the Project on these efforts. *See* supra Section IV(B)(3). The Nature Conservancy and New England Forestry Foundation, both members of the Partnership, have submitted letters supporting this Project. *See* App. Exh. 16 and App. Exh. 29 In addition, AMC, also a member of the Partnership, has reached an agreement with the Applicant that resolves the aesthetic concerns AMC raised in the prior docket with respect to the Project. *See Application*, App. Exh. 33, Appendix 11, AMC Agreement Fully Executed. Additionally, parties to this proceeding have referred to the Harris Center and Mr. Meade Cadot, the land program director, as the visionaries behind the "SuperSanctuary," and asserted that the Project conflicts with that effort. *See Prefiled Testimony of Mary Allen*, LA 1, p. 4. The Harris Center is also a member of the Quabbin to Cardigan Partnership. Despite these assertions, however, the Harris Center and Mr. Cadot have agreed to and signed all of the conservation easements the Applicant has with private property owners. *See Application*, App. Exh. 33, Appendix 10, p. 12. The Harris Center has further noted that "If the wind energy project is approved by the SEC, this agreement would provide substantial conservations [sic] benefits." *See Jack Kenworthy Supplemental Testimony – Attachment JK-17.*

Despite the fact that much of the project area is considered highest ranked habitat for wildlife according to the 2015 Wildlife Action Plan (s*ee Valleau/Gravel Supplemental Testimony*

App. Exh. 22, p. 9), NHF&G has not, in any of its correspondence with the Applicant, "discussed that it ha[d] concern about the Wildlife Action Plan or the habitat discussed therein with respect to this project." *Tr. Day 8/Afternoon Session*, p. 119. In addition, while a portion of the project area is considered Tier 1 habitat, much of the land that will be permanently conserved will also be Tier 1 habitat. More specifically, "AWE will permanently conserve 602 acres of Tier 1 habitat and 192 acres of Tier 2 habitat. That means that the Project will permanently conserve over 34 times as much Tier 1 habitat and 12 times as much Tier 2 habitat as it impacts." *Valleau/Gravel Supplemental Testimony*, App. Exh. 22, p. 4-5; *see also Tr. Day Day 2/Afternoon Session*, p. 149.

The evidence before the Subcommittee supports the determination that the Project will not have an unreasonable adverse effect on the natural environment and that the Project will provide significant benefits to the wildlife in the region as well as the conservation community. In the prior Antrim Wind docket, the Subcommittee members "opined that the Facility would not have an unreasonable adverse effect on the natural environment, so long as certain conditions were imposed." *Decision and Order Denying Application for Certificate of Site and Facility*, Docket No. 2012-01, p. 64 (April 25, 2013). The Applicant has adopted all of the conditions proposed by the SEC in the prior docket. *Valleau/Gravel Supplemental Testimony*, App. Exh. 22, p. 8. The finding that the Project will not have an unreasonable adverse effect on the natural environment is even more compelling in this docket. As part of the Applicant's effort to adopt all proposed conditions, the Applicant has developed a BBCS that is unprecedented in the State and intended to be adaptive and responsive to best protect bird and bat species in the project area. Additionally, the Project footprint is smaller in size than in the prior docket. As noted, by Mr. Valleau and Mr. Gravel, the project footprint is relatively small and "[d]oesn't create a fragment

that would preclude movement of animals through that SuperSanctuary." *Tr. Day 2/Afternoon Session*, p. 149. In addition, the Applicant has increased the number of acres of conservation land offered as part of its mitigation package. Importantly, this increase in conservation land includes acreage that spans 100 percent of the Tuttle Ridge. *Tr. Day 2/Morning Session*, p. 137. The Applicant has consistently worked with and will continue to work with State and federal agencies to address concerns regarding the natural environment and species within the project area.

5. Public Health and Safety

The Applicant has provided substantial evidence and testimony sufficient to demonstrate that the Project will not have an unreasonable adverse effect on public health and safety. This includes, but is not limited to, evidence regarding ice throw and icing conditions, shadow flicker, and noise.

a) Ice Throw

The evidence establishes that the Project will not pose an unreasonable risk to public health and safety as a result of ice throw. The proposed Siemens turbines are equipped with numerous system that monitor for ice buildup that could lead to potentially hazardous conditions. *See Jack Kenworthy Supplemental Testimony,* App. Exh. 24, p. 27; *see also Application*, App. Exh. 33, Section 1.6.b. These systems will automatically shut down an affected turbine under a range of icing conditions. *Tr. Day 2/Afternoon Session*, p. 26. For example, the first control mechanism is the anemometer, which senses wind speed, and is located on the nacelle of each turbine. If the anemometer starts to ice up, a signal is sent to the SCADA system which will then shut down the turbine. *Tr. Day 2/Afternoon Session*, p. 26. Likewise, the Turbine Condition Monitoring system ("TCM") monitors abnormal vibrations, such as those caused by icing on the

blades. If such abnormalities are detected the turbine will automatically shut down. *Tr. Day 2/Afternoon Session*, p. 26-27. Siemens has over 1,050 of the exact turbine model proposed for this Project installed globally. *Tr. Day 2/Afternoon Session*, p. 28. Mr. Marcucci, from Siemens, testified that he is "not aware of any situation where ice throw has caused injury or damage to property or people." *Tr. Day 2/Afternoon Session*, p. 29. Further, Mr. Stovall testified that while 67,000 turbines are located in conditions where icing can occur, "there have been no reported or documented injuries." *Tr. Day 2/Morning Session*, p. 147. Thus, the evidence indicates that risks from ice throw are extraordinary small.

In addition, the proposed setbacks are more than adequate to protect the public, as required pursuant to Site 301.08(a)(3), and are farther than setbacks for Lempster and Groton Wind projects in New Hampshire.[69] The proposed setbacks to residences, public roads and gathering areas are extremely robust, with over ½ mile to the closest turbine. *See Jack Kenworthy Supplemental Testimony*, App. Exh. 24, p. 27. Moreover, in DNV GL's extensive experience, the furthest thrown ice detected at any operational wind facility is 250 meters from the center of the turbine. *Tr. Day 2/Morning Session*, p. 144. In general, Mr. Stovall also testified, that "DNV GL is of the opinion that ice throw is a minor risk for this Project." *Tr. Day 2/Morning Session*, p. 143. The closest non-participating property line, a vacant woodlot with no structures on it, is over 1.2 times the turbine height distant from the nearest turbine, which is consistent with industry standard and prior SEC rulings, and all other property line setbacks are considerably further. *See Jack Kenworthy Supplemental Testimony*, App. Exh. 24, p. 28. Given that the distance between the closest wind turbine at the Project Site and the nearest residence,

[69] *See Jack Kenworthy Supplemental Testimony*, App. Exh. 24, p. 29 (Noting that the Groton Wind Project in New Hampshire features a 460-foot setback from its turbines to the closest property line, nearly 130 feet closer than the Antrim project. In that docket the Subcommittee found, "that the Project does not pose a danger to the human health and safety due to ice throws and finds it unnecessary to impose any conditions in this regard." *Decision Granting Certificate of Site and Facility with Conditions*, Docket No. 2010-01, p. 77 (May 6, 2011).

other occupied structure or public road are greater than ½ mile, or 804.7 meters, well beyond the maximum distance any ice fragment could travel based on DNV GL's experience, there is very minimal risk of injury to the public or property damage. *See Jack Kenworthy Supplemental Testimony*, App. Exh. 24, p. 27.[70]

b) Noise

Since the prior Antrim Wind docket, the Committee has gone through an extensive rule making process pertaining to its noise regulations. During that process, the Committee carefully considered input from a wide range of stakeholders. Ultimately, the rule making process resulted in very specific requirements for wind facilities. *See* Site 301.18. One of the main purposes for setting out these detailed requirements is to minimize litigation associated with the issue of noise standards by setting out clear protocols and specific noise limits.

Mr. O'Neal has provided extensive testimony demonstrating that Epsilon complied with and followed all requirements and standards set out in the SEC rules. His testimony confirms that this Project will comply with all applicable requirements and will not have an unreasonable adverse effect on public health and safety in relation to noise.

The Applicant has submitted a comprehensive Sound Level Assessment Report that evaluated both existing sound levels and the predicted noise levels associated with this Project. *See Application*, App. Exh. 33, Appendix 13A; *see also Supplement to Application re: New Rules*, App. Exh. 34, Attachment 9. This Report concluded that the predicted worst-case sound levels for this Project would not exceed the noise level limits set out in Site 301.14(f)(2).

[70] *See* Abutter Exh. 52; *see also Tr. Day 13/Evening Session*, p. 6-10 (With respect to ice throw, "So you're aware that the 'return period' that's being referred to is the probability of a piece of ice landing on a given square meter at a given distance?...if at 150 meters, the return period is one year in a thousand…that scale is going to continue to go up logarithmically, and we're looking at a probability of about every 10,000 years...what this appears to show is, at 175 meters, [ice would be thrown] once every 10,000 years.")

First, existing sound levels were measured in January 2016 at five locations, intended to be representative of nearby residences, in various directions from the proposed wind facility within a 2-mile radius, consistent with Site 301.18(a)(3). *See Robert O'Neal Testimony,* App. Exh. 6, p. 3. Epsilon simultaneously collected wind speed data while evaluating background sound levels as wind speed can have a strong influence on ambient sound levels. S*ee* App. *Supplement to Application re: New Rules,* App. Exh. 34, Attachment 9, p. 6-1.

Second, Epsilon modeled the predicted sound levels associated with the operation of the Project for 344 potentially sound-sensitive structures within 2 miles from the proposed Project as required pursuant to Site 301.18(c)(3). S*ee Supplement to Application re: New Rules,* App. Exh. 34, Attachment 9, p. 7-3. The Sound Assessment predicted sound levels using the Cadna/A noise calculation software that employs the ISO 9613-2 international standard for sound propagation as required under the SEC's rules. *See* Site 301.18(c)(1). The software performs highly refined computations that take into consideration the effects of topography, ground attenuation, multiple building reflections, drop-off with distance, and atmospheric absorption. S*ee Supplement to Application re: New Rules,* App. Exh. 34, Attachment 9, p. 7-2. Consistent with the ISO 9613-2 standard, the model assumes favorable conditions for sound propagation, which corresponds to a moderate, well-developed ground-based temperature inversion. S*ee Supplement to Application re: New Rules,* App. Exh. 34, Attachment 9, p. 7-4. The model also includes the highly conservative assumption that each receptor is always located directly downwind from every turbine simultaneously. S*ee Supplement to Application re: New Rules*, App. Exh. 34, Attachment 9, p. 7-4; *see also Robert O'Neal Prefiled Testimony,* App. Exh. 6, p. 5. While this is not physically possible, it allows for calculation of the theoretical "worst case" as required pursuant to the SEC's rules. Site 301.18(c)(3).

In order to run the predictive sound model, certain inputs were employed. Mr. O'Neal input into the model the Project layout as well as the location of sensitive receptors and the elevation contours. Mr. O'Neal also used the guaranteed sound power level of 106.0 dBA, which was provided by Siemens. As part of the model, Mr. O'Neal used an uncertainty factor of 1.5 dBA, also provided by Siemens, for a total modeled sound power level of 107.5 dBA. S*ee Supplement to Application re: New Rules,* App. Exh. 34, Attachment 9, p. 7.4. Additionally, Mr. O'Neal, based on his professional judgment and substantial experience, chose to use a ground attenuation factor, or G-factor, of 0.5. While the area surrounding the proposed Project is almost exclusively porous, suggesting a G-factor of 1.0, Epsilon chose to employ another conservative assumption in using the G-factor of 0.5, which reflects an assumption that the ground surface within the project area is partly reflective and partly porous. S*ee Robert O'Neal Supplemental Testimony,* App. Exh. 13, p. 6-7.

While professionals may disagree about the appropriate uncertainty factor and G-factor that should be applied, the SEC rules do not specifically establish such requirements and these determinations are left up to professional judgement. *Tr. Day 11/Morning Session*, p. 31-32. Parties in this docket have asserted that Mr. O'Neal should have included an additional +/- 3 dBA "correction" factor, however, this +/- 3 dBA is an estimate of accuracy in the standard under certain conditions or and does not apply to this Project as it does not fit the requirements set out in the standard. S*ee Robert O'Neal Supplemental Testimony*, App. Exh. 13, p. 3-4. In addition, Mr. James, who testified that this +/- 3 dBA "correction" factor should have been added into the model also testified that he would have "thrown in another 5 dBA" but could not point to any place in the SEC rules or ISO standard that requires or even talks about including this additional assumption. *Tr. Day 11/Morning Session*, p. 32-33. Instead, Mr. James appears to

base his assessment on his own extreme and unscientific views, which have no basis in any standard, agreeing that "some would say 10 or 15 as an adder." *Tr. Day 11/Morning Session* p. 70. Moreover, Mr. O'Neal has noted that post-construction monitoring has demonstrated, for example at the Groton Wind Project and Stetson Mountain I project, that the methodology employed by Epsilon in this docket, using the same assumptions, yields accurate results.

In the Stetson Wind case in Maine, where the preconstruction modeling included an additional 3 dBA uncertainty, the post-construction measurements demonstrated that the model with those assumptions over-predicted sounds levels by 4 dBA. In other words, if the 3 dBA had not been included, the model still would have over-predicted actual sounds levels by 1 dBA. In the case of Groton Wind, the preconstruction sound assessment was performed using the same assumptions in the same model as Mr. O'Neil used for the Antrim Project in this Docket. Post construction testing at the Groton Wind project found that preconstruction modeling results were conservative (higher) than post construction measurements. Adding an additional +/- 3 dBA results in significantly and unrealistically over-predicted sound levels. S*ee Robert O'Neal Supplemental Testimony,* App. Exh. 21, p. 5; *see also Tr. Day 3/Afternoon Session*, p. 112.

Mr. James also made an effort to present himself as an expert on health effects associated with noise from wind facilities. As the Applicant noted, an Oregon Federal Court "looked at Mr. James' qualifications with respect to testifying as a health expert in wind cases, and found that he was not qualified to do so." *Tr. Day 10/Afternoon Session*, p. 24-25. The Committee rejected his testimony on that topic. *See Tr. Day 10/Afternoon Session*, p. 26. Moreover, during cross-examination, Mr. James did not accurately represent the findings of a Health Canada study, stating that "Health Canada conducted $2 million study over a couple of years…what the study showed is that people living at a mile and a quarter away from the nearest wind turbine had

almost double the rate of migraines, dizziness, and tinnitus." *Tr. Day 11/Morning Session*, p. 14. However, the findings from the 2014 study published on the Health Canada website noted that:

> Results of self-reported measures of sleep, that relate to aspects including, but not limited to general disturbance, use of sleep medication, diagnosed sleep disorders and scores on the PSQI, ***did not support an association*** between sleep quality and WTN [Wind Turbine Noise] levels…Self-reports of having been diagnosed with a number of health conditions ***were not found to be associated with*** exposure to WTN levels. These conditions included, but were not limited to chronic pain, high blood pressure, diabetes, heart disease, dizziness, migraines, ringing, buzzing or whistling sounds in the ear (i.e., tinnitus)…Self-reported stress, as measured by scores on the Perceived Stress Scale, ***was not found to be related to*** exposure to WTN levels…Exposure to WTN ***was not found to be associated with*** any significant changes in reported quality of life for any of the four domains, nor with overall quality of life and satisfaction with health.

Wind Turbine Noise and Health Study: Summary of Results, Health Canada (2013)(emphasis added), http://www.hc-sc.gc.ca/ewh-semt/noise-bruit/turbine-eoliennes/summary-resume-eng.php; *see also Tr. Day 11/Morning Session*, p. 66-67. [71]

Based on Mr. O'Neal's experience as an acoustical expert, he has found that the conservative set of modeling assumptions implemented by Epsilon for this Project yield accurate results. Based on this review, Mr. O'Neal concluded that because the predicted worst-case sound levels for this Project will be well below 45 dBA during the day and 40 dBA at night, at all occupied buildings, the Project will easily meet the required noise levels established by the SEC rules. The SEC rules further require the Applicant to complete post-construction compliance testing. Site 301.18(e). The Applicant believes, given the conservative modeling

[71] In addition, numerous other health studies have been performed relating to the operation of wind facilities and have found that there is no correlation between alleged health effects and the operation of wind facilities. *See* Division of Environmental Health Maine Center for Disease Control, *Analysis of the Research on the Health Effects from Wind Turbines, including Effects from Noise* (2012)(The "Maine CDC concludes that there is no evidence that sound from wind generating facilities that are in compliance with Maine's regulations directly cause health problems."); *see also* Chief Medical Officer of Health Report, *The Potential Health Impact of Wind Turbines* (May 2010)("The review concludes that while some people living near wind turbines report symptoms such as dizziness, headaches, and sleep disturbance, the scientific evidence available to date does not demonstrate a direct causal link between wind turbine noise and adverse health effects. The sound level from wind turbines at common residential setbacks is not sufficient to cause hearing impairment or other direct health effects, although some people may find it annoying.")

assumptions employed, it is highly unlikely that the Project will exceed the maximum sound levels.

While the Applicant is confident in its predictive noise modeling and believes that it will easily meet the sound requirements, *see Supplement to Application re: New Rules*, App. Exh. 34, Attachment 9, p. 8-1, if for some reason the Applicant is unable to meet these limits, based on the required post construction modeling or other testing, the Applicant has curtailment mechanisms available to ensure continued compliance. First, the Project has a significant margin of safety of 2 dBA already based on the predictive sound modeling. *Tr. Day 4/Afternoon Session*, p. 38. If additional noise reduction is necessary, the turbines have a noise reduced operating ("NRO") mode that can be employed. *Tr. Day 4/Afternoon Session*, p. 38. AWE can step down each turbine in one decibel increments as necessary in order to comply with the requirements in the SEC rules. *Tr. Day 4/Afternoon Session*, p. 38.

c) Shadow Flicker

In addition to the Committee's adoption of comprehensive rules governing noise standards, the Committee has also adopted specific requirements and limits relating to shadow flicker associated with the operation of wind facilities. A key aspect of the new rules is that a project cannot produce more than 8 hours of shadow flicker per year at or within any residence, learning space, workplace, healthcare setting, outdoor or indoor public gathering area, or other occupied building. Site 301.14(f)(2)(b). This is the most stringent shadow flicker standard for any project in New Hampshire, *Tr. Day 2/Morning Session*, p. 21, and New Hampshire has the most stringent standard in the United States. *Tr. Day 4/Afternoon Session*, p. 40. Based on the modeling completed by Epsilon under conservative conditions and without any operational controls, 24 locations may exceed the limit of 8 hours of shadow flicker per year with the

maximum expected shadow flicker at any residence being 13 hours and 48 minutes. *Tr. Day 1/Afternoon Session*, p. 180; *see also Supplement to Application re: New Rules*, App. Exh. 34, Attachment 6, p. 1-1. The Applicant will employ a shadow flicker control technology to ensure compliance with the SEC limit of 8 hours per year. *See Supplement to Application re: New Rules*, App. Exh. 34, Attachment 6, p. 5-1. In addition, the Applicant has agreed to file a report documenting the use of the control technology with the Town and the Committee. *Tr. Day 2/Afternoon Session*, p. 70. With this mitigation, shadow flicker will be at or below 8 hours per year at all modeled sensitive receptors, and therefore, the Project will be in compliance with the SEC standard with respect to shadow flicker.

The Applicant conducted a shadow flicker study using *WindPRO* version 3.0.639 software ("WindPro"). *Supplement to Application re: New Rules*, App. Exh. 34, Attachment 6, p. 4-1. WindPro is a widely accepted software modeling package developed specifically for the design and evaluation of wind power projects. The Applicant calculated two different measurements, the worst-case or astronomical maximum calculation and the expected shadow flicker. The worst-case calculation assumes that the sun is always shining during the day and that the wind turbine is always operating. *Supplement to Application re: New Rules*, App. Exh. 34, Attachment 6, p. 4-1. Sunshine probabilities, obtained from the National Climatic Data Center, and expected wind turbine operational data are then incorporated into the model to calculate the expected shadow flicker. *Supplement to Application re: New Rules*, App. Exh. 34, Attachment 6, p. 4-1. The expected shadow flicker modeling is conservative as it assumes a "greenhouse" mode, with windows facing all directions. *Supplement to Application re: New Rules*, App. Exh. 34, Attachment 6, p. 4-1; *see also Robert O'Neal Prefiled Testimony*, App. Exh. 6, p. 15. Importantly, the model also does not consider structures and vegetation that could

screen the receptors and reduce expected shadow flicker. *Supplement to Application re: New Rules*, App. Exh. 34, Attachment 6, p. 6-1; *see also Tr. Day 2/Afternoon Session*, p.53; *see also Robert O'Neal Prefiled Testimony*, App. Exh. 6, p. 15. Therefore, the expected level of shadow flicker calculated is extremely conservative and will likely be less than what is predicted, given the effect of vegetative screening. Ultimately, the shadow flicker associated with operation of the Project has been conservatively estimated and the Applicant has agreed to curtail, as necessary, using a shadow flicker control technology, to ensure that the Project is in compliance with the SEC rules and does not pose an unreasonable adverse effect to public health.

The utilization of a hardware and software solution to control shadow flicker from wind turbines has been successfully deployed many times across the world and in the United States. Siemens will provide AWE with such a shadow flicker control system ("SFCS") that will adapt proven systems utilized by Siemens and others throughout Europe. *See* AWE's Response to the Subcommittee Data Requests, November 7, 2016.

The Applicant is aware of concerns that have been raised regarding the applicability of the noise and shadow flicker requirements to future structures not present at the time the Application was filed. The Applicant believes the rules do not apply to such structures.

SEC regulations state that sound limits shall apply "on property that is used in whole or in part for permanent or temporary residential purposes, at a location between the nearest building on the property used for such purposes and the closest wind turbine." And shadow flicker shall be limited "at or within any residence, learning space, workplace, healthcare setting, outdoor or indoor public gathering area, or other occupied building." 301.14(f)(2)(a), (b). The rule does not require the stated sound level thresholds and shadow flicker limits to be met with respect to any conceivable future development.

It is well settled that "words and phrases shall be construed according to the common and approved usage of the language: but technical words and phrases, and such others as may have acquired a peculiar and appropriate meaning in law, shall be construed and understood according to such peculiar and appropriate meaning." RSA 21:2. The relevant rule provides that sound level thresholds apply to a "property that *is* used in whole or in part for permanent or temporary residential purposes," or "other occupied building" (i.e. is occupied). Site 301.14 (f) (2) (a) and (b) (emphasis added). By its terms, the rule applies only to property that is used for residential purposes, not for property that may someday be used for residential purposes. A strained or over-reaching interpretation is prohibited, and courts will look elsewhere for an alternative interpretation only when the plain statutory language permits more than one reasonable interpretation. *State v. Telles*, 139 N.H. 344, (1995). With respect to this regulation, there is no other reasonable interpretation; it is not reasonable to graft in the words "may someday be used" in place of the words "is used." Thus, Site 301.14 (f) (2) (a) and (b) only apply to property that is currently used for residential purposes.

Likewise, the United States Supreme Court has recognized that verb tense indicating the present or future application of rules or laws are critical to determining when certain provisions of law may take effect. *United States v. Wilson*, 503 U.S. 329, 333 (1992) (holding that because Congress used verbs in the past and present perfect tense, it intended that computation of credit against a sentence must occur after the defendant begins his sentence and a district court may not apply it at sentencing.) The New Hampshire Supreme Court has additionally interpreted present-tense regulations on which contingent factors rely to include only those factors in existence at the time of the action contemplated by the regulation. *Stankiewicz v. City of Manchester*, 156 N.H. 587, 590 (2007) (holding that because a contract was formed after the passage of an ordinance,

the contract was not exempt from the ordinance.). In the same way, the use of present tense in Site 301.14 (f) (2) (a) and (b) indicates a clear legislative intent that these thresholds apply only to those residential homes existing at the time of Certificate issuance.

Finally, if the rules were interpreted to apply to future structures, it would make them impermissibly vague. *State v. MacElman*, 154 N.H. 304, 307 (2006) (a statute is impermissibly vague "if it fails to provide people of ordinary intelligence a reasonable opportunity to understand what conduct it prohibits."). If Site 301.14 (f) (2) (a) and (b) were interpreted to be applicable to future residential structures, there is no way for a developer to understand what may become an act proscribed by the law. Put simply, a developer cannot know whether it is in compliance with the Rule when the threshold can be changed at any time by building a residence some place currently undeveloped.

Notwithstanding these concerns, in an effort to compromise regarding this issue and address the concerns of neighboring landowners, the Applicant has submitted a proposed condition for the Subcommittee's consideration which has been negotiated and agreed to by AWE and the Antrim Board of Selectmen.[72]

D. The Site and Facility is in the Public Interest

Prior to 2014, the SEC, pursuant to RSA 162-H:16, IV, (a), (b) and (c), used a three-step test in determining whether to issue a Certificate of Site and Facility. The three-step test required the SEC to consider: (1) financial, technical and managerial capable, (2) whether the

[72] The Applicant is also aware that Barbara Berwick, an intervenor in this docket, has provided notice that she intends to construct a structure 20 feet from the edge of her property line. After reviewing the applicable Antrim zoning regulations it is the Applicant's position that, as an initial matter, within the rural conservation district, the minimum setback distance for any structure is 50 feet. Second, Ms. Berwick has indicated that she will not require a building permit for her structure. The Applicant believes that any structure that does not require a building permit would be classified as an accessory structure and, in turn, such structures are clearly not the type of structures subject to the noise and shadow flicker requirements set out by the NH SEC rules. *See* Site 301.14(f)(2)(a), Site 301.08(a)(2). Alternatively, any structure that would arguably be covered by the SEC rules for sound or shadow flicker , would not be permitted under Antrim zoning because the Rural Conservation Zoning district limits residential structures to a maximum of one per lot. *See* Article XIV(A)(1).

proposed project would unduly interfere with the orderly development of the region, and (3) whether the project would have unreasonable adverse effects. In 2014, the Legislature expanded the test to four steps by adding RSA 162-H:16, IV (e), which requires a finding that the Certificate will also serve the public interest.

It is critical to recognize that the Legislature did not repeal the three existing steps in the test, but added a fourth. All four steps play an equal role. Consequently, the Subcommittee must harmonize the fourth step with the other three so that they maintain their vitality and are not wholly subsumed by the fourth step.

Some argue that the public interest prong of the four-part test amounts to an independent balancing test on its own. That is not correct. If the Legislature had intended to make the fourth step superior to the other three, however, it would have done so. The test for the Subcommittee is not a stand-alone public interest test, which would suggest very broad discretion. Instead, the test, insofar as it relates to the public interest, is guided or limited by the context of the other three findings. The Subcommittee must find whether, in addition to the other three findings, the project, in the language of the statute, *serves* the public interest. In other words, does it do something good; does it provide benefits?[73]

The alternative to the guided public interest approach is a stand-alone public interest test in which the Subcommittee, in one formulation, could simply add up and balance the pluses and minuses of the proposal, that is, apply a net benefits or balancing test of its own devising. Such a net benefits approach in these circumstances, however, would vitiate subsections (b) and (c)

[73] *Grafton Etc. Co. v. State*, 77 N.H. 539, 94 A. 193, 194-95 (1915)("The measure by which the matter is to be determined is described by the Legislature as 'the public good.' …This is equivalent to a declaration that the proposed action must be one not forbidden by law, and that it must be a thing reasonably to be permitted under all the circumstances of the case…The questions here are then: Are the proposed transfers, consolidation, and increased capitalization, or any of them, (1) contrary to law or (2) unreasonable?").

regarding undue interference and unreasonable adverse effects and would also be contrary to legislative history, which shows that a net benefits test was considered and rejected. Thus, the Subcommittee has less discretion than would be the case if the other three steps had been repealed or an express net benefits test had been enacted.

In order therefore to lead to a reasonable result, in which the parts of the test do not contradict one another (which comports with the plain meaning of the words, and which is consistent with the legislative history and intent), the Subcommittee first looks at the applicant's capabilities. Then it examines the impacts from the proposed project in terms of whether it will unduly interfere with the orderly development of the region or have unreasonable adverse effects. Finally, it evaluates whether the project that will serve the public interest by providing benefits. If the applicant is capable, if the impacts are neither undue or unreasonable, and if there are benefits, then a Certificate should be issued.

As for the benefits from this proposed Project, there are many. First, the State of New Hampshire has clearly stated policy goals to encourage and to expand renewable energy generation within the State.[74] The Project will assist in meeting goals relating to the renewable portfolio standard, regional greenhouse gas initiative, and will positively impact regional air quality. *See* NH RSA 362-F:1. In addition, the Project is consistent with and will promote the goals expressed in the New Hampshire Climate Action Plan, including: reducing greenhouse gas emissions of 80 percent below 1990 levels by 2050, supporting regional initiatives to reduce greenhouse gases, and increase renewable and low-CO2 emitting sources of energy. *See New Hampshire Climate Action Plan*, p. 2-5 (March 2009).

[74] NH RSA 362-F:1 (The Purpose section notes that "[i]t is therefore in the public interest to stimulate investment in low emission renewable energy generation technologies in New England and, in particular, New Hampshire, whether at new or existing facilities.")

Furthermore, the Applicant signed a PPA with New Hampshire Electric Cooperative that will ensure that at least 25% of the output from the Project will remain directly in New Hampshire. *See Weitzner/Shaw Supplemental Testimony*, App. Exh. 20, p. 7.

The goals expressed by the State are mirrored in the Town of Antrim's Master Plan, which encourages the promotion of renewable energy. This Project will encourage the growth of renewable energy in the Town, assist in combating the effects of climate change associated with dependence on fossil fuel based energy sources, while also forever conserving open space and assisting to maintain the rural character of the Town.

The Project will also be a significant investment in the Town with numerous benefits to the community and the State. The construction of the Antrim Wind Project will result in the conservation of an additional 908 acres, including 602 acres of Tier 1 habitat being conserved. *Valleau/Gravel Supplemental Testimony*, App. Exh. 22, p. 4-5; *see also Tr. Day 2/Afternoon Session*, p. 149. These conservation lands span the important Tuttle Ridge and connect surrounding areas of land already conserved. *Tr. Day 2/Morning Session*, p. 137. Without this Project in place, these substantial conservation benefits will not be realized. *See Jack Kenworthy Supplemental Testimony*, App. Exh. 24, Attachment JK-14A – JK-14E.

Additionally, the Project advances local improvements and community initiatives, including investments at the Gregg Lake Beach and recreation area and an agreement with the Antrim Trustees of Trust Funds for Antrim Wind to make annual contributions to the Antrim Scholarship Fund – a commitment that will increase that fund's annual budget by approximately 25%. The Project has negotiated several agreements with the Town of Antrim including the PILOT Agreement, which will provide significant, stable revenue to the Town for the first 20 years of the Project, paying the highest per MW payment of any PILOT Agreement for a wind

project in New Hampshire, totaling $8,376,469 over the first 20 years of the Project's life. *See Jack Kenworthy Supplemental Testimony,* App. Exh. 24, p. 6.

In addition, the Applicant has reached an agreement with the Town governing many requirements during preconstruction, construction and operations, to ensure members of the public are informed and to ensure safety procedures and requirements are evaluated. *See Application* App. Exh. 33, Appendix 17a.

The Project will create or support 84 full time equivalent jobs during construction and 12 full time equivalent jobs during the ongoing operations phase. *Matthew Magnusson Prefiled Testimony* , App. Exh. 4, p. 5. The Project is expected to bring $53.4 million in increased economic activity to Cheshire, Hillsborough, Merrimack, Rockingham and Sullivan counties. *Matthew Magnusson Prefiled Testimony,* App. Exh. 4, p. 5.

This effort to advance the clear public policy goals of the legislature and the Town, coupled with the careful siting and numerous benefits the Project will bring to the region and the Town of Antrim, demonstrate that the Antrim Wind Project serves the public interest.

V. CONCLUSION

The record contains substantial evidence with respect to each of the criteria set forth in RSA 162-H:16, IV such that Antrim Wind Energy has more than met its burden of proof with respect to each of these requirements. Accordingly, AWE respectfully requests that this Subcommittee issue a Certificate of Site and Facility for the Antrim Wind Project, subject to any conditions it deems necessary and appropriate.

Respectfully submitted,

McLANE MIDDLETON,
PROFESSIONAL ASSOCIATION

Dated: November 30, 2016

By: _____

Barry Needleman, Bar No. 9446
Rebecca S. Walkley, Bar No. 266258
11 South Main Street, Suite 500
Concord, NH 03301
(603) 226-0400
barry.needleman@mclane.com
rebecca.walkley@mclane.com

Certificate of Service

I hereby certify that on the 30th of November 2016, an original and one copy of the foregoing Post-Hearing Memorandum were hand-delivered to the New Hampshire Site Evaluation Committee and an electronic copy was served upon the Distribution List.

_____
Barry Needleman