

**Environmental Review Tribunal**  
Tribunal de l'environnement



**ISSUE DATE:** April 26, 2017

**CASE NO.:** 15-068

**PROCEEDING COMMENCED UNDER** section 142.1(2) of the *Environmental Protection Act*, R.S.O. 1990, c. E.19, as amended

Appellant: John Hirsch (File No.15-068)  
Appellant: Alliance to Protect Prince Edward County  
(File No.15-069)  
Approval Holder: wpd White Pines Wind Incorporated  
Respondent: Director, Ministry of the Environment and  
Climate Change  
Subject of appeal: Renewable Energy Approval for White Pines  
Wind Project  
Reference No.: 2344-9R6RWR  
Municipality: County of Prince Edward  
ERT Case No.: 15-068  
ERT Case Name: Hirsch v. Ontario (Environment and Climate  
Change)

Heard: January 27, 2017 in Wellington, Ontario and  
in writing

**APPEARANCES:**

**Parties**

John Hirsch

Alliance to Protect Prince Edward  
County

Director, Ministry of the Environment  
and Climate Change

**Counsel**

Self-represented

Eric Gillespie and Peter Zywot

Sylvia Davis and Rebecca Crangle

wpd White Pines Wind Incorporated

Patrick Duffy and James Wilson

## **DECISION DELIVERED BY MARCIA VALIANTE AND HUGH S. WILKINS**

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### **REASONS**

#### **Background**

[1] On July 16, 2015, Mohsen Keyvani, Director, Ministry of the Environment and Climate Change (“MOECC”) issued Renewable Energy Approval No. 2344-9R6RWR (“REA”) to wpd White Pines Wind Incorporated (“Approval Holder”) authorizing the construction, installation, operation, use and retiring of a Class 4 wind facility consisting of 27 wind turbines, two transformer stations, underground electrical cabling, distribution lines and associated infrastructure (“Project”), to be located in Prince Edward County (“County”), Ontario. The Project is located near the south shore of the County and bounded by Brummell Road and Bond Road to the North, Lighthall Road to the West, Gravelly Bay Road to the East, and Lake Ontario to the South (“Project site”).

[2] On July 29, 2015, John Hirsch filed a notice of appeal of the REA with the Environmental Review Tribunal (“Tribunal”), pursuant to s. 142.1 of the *Environmental Protection Act* (“EPA”), seeking revocation of the REA on the grounds that the Project will cause serious and irreversible harm to plant life, animal life and the natural environment. On July 31, 2015, the Alliance to Protect Prince Edward County (“APPEC”) filed a notice of appeal with the Tribunal seeking revocation of the REA on the grounds that the Project will cause serious and irreversible harm to plant life, animal life and the natural environment, and will cause serious harm to human health. A third appeal, by the Prince Edward County South Shore Conservancy, was withdrawn and dismissed by the Tribunal in its Order dated September 30, 2015.

[3] The Director's decision to issue the REA approving the Project with 27 wind turbines did not include approval of two proposed wind turbines that were included in the Approval Holder's application for the REA. The Approval Holder appealed the Director's decision, seeking: (1) an amendment to the REA to add the two refused wind turbines to increase the total to 29, and (2) an amendment to the REA to correct "apparent drafting errors" in Condition L1(3)(a) of the REA, which addresses avoidance measures for Blanding's turtle. This appeal was given Tribunal Case No. 15-071. On January 8, 2016, the Tribunal issued an Order dismissing the portion of that proceeding respecting the Director's refusal to approve the two wind turbines and adjourned the hearing of the issue of the amendment of Condition L1(3)(a) of the REA until after the resolution of the appeals in this proceeding.

[4] The hearing in this proceeding commenced on November 2, 2015 and was held over 21 days in November and December 2015 in Wellington and Picton in the County and at the Tribunal's offices in Toronto, Ontario. In an order dated February 26, 2016 ("February 2016 Order"), the Tribunal found that, pursuant to s. 145.2.1(2) of the *EPA*, engaging in the Project in accordance with the REA will cause serious and irreversible harm to plant life, animal life or the natural environment. This finding was based on evidence about the impact of the Project on two species at risk ("SAR"), specifically Little Brown Bat ("LBB") and Blanding's turtle. On that date, the Tribunal adjourned the proceeding in accordance with s. 59(2) 1.ii of Ontario Regulation ("O. Reg.") 359/09 respecting Renewable Energy Approvals. The proceeding was again adjourned on March 21, 2016 and July 27, 2016, following status update telephone conference calls.

[5] The remaining issue in this proceeding is for the Tribunal, under s. 145.2.1(4) of the *EPA*, to determine whether to revoke the decision of the Director, direct the Director to take such action as the Tribunal considers the Director should take in accordance with the *EPA* and its regulations, or alter the decision of the Director. This is referred to as the "remedy phase" of the proceeding.

[6] By order dated June 30, 2016 (“June 2016 Order”), the Tribunal determined that the parties would be permitted to adduce additional evidence in the remedy phase and that the evidence and submissions would be limited to specified issues. The Director’s and the Approval Holder’s witness statements were filed on July 22, 2016. In response to a motion brought by APPEC, the Tribunal ordered on August 24, 2016 that all evidence for the remedy phase would be received in writing. The Tribunal also directed that the remaining procedural steps respecting witness statements, reply witness statements, and transcripts of cross-examinations were to be completed by September 30, 2016, with final submissions to follow.

[7] APPEC brought a series of 15 motions in September, October, November and December 2016 with respect to different aspects of the evidence. The Tribunal made rulings on these motions in orders dated November 14, 2016, December 13, 2016, December 23, 2016 and March 2, 2017.

[8] The parties filed written submissions regarding the remedy they are seeking in January 2017. On January 27, 2017, the Tribunal heard oral submissions in Wellington, Ontario. At that time, the Tribunal heard submissions respecting the propriety of certain reply submissions of the Approval Holder, but reserved its ruling. The Tribunal’s ruling with respect to this issue is found in Appendix 1, attached to this decision. Following oral submissions on January 27, 2017, the Tribunal again adjourned the proceeding under s. 59(1) of O. Reg. 359/09, leaving sufficient time, based on this and the previous “clock-stopping” adjournments in this proceeding for the Tribunal to dispose of the proceeding with the issuance of the within Decision without the REA being deemed to be confirmed under s. 145.2.1(6) of the *EPA*.

## Issues

[9] The main issue is, in accordance with s. 145.2.1(4) of the *EPA*, whether to revoke the decision of the Director, direct the Director to take such action as the Tribunal considers the Director should take in accordance with the *EPA* and the regulations, or alter the decision of the Director. The following are the sub-issues that need to be determined:

1. the Tribunal's jurisdiction to consider the Approval Holder's mitigation plans;
2. the standard of proof under s. 145.2.1(4) of the *EPA*;
3. the adequacy of the Approval Holder's Mitigation Plan for LBB;
4. the adequacy of the Approval Holder's Mitigation Plan for Blanding's turtle; and
5. the appropriate remedy.

## Relevant Legislation

[10] The relevant provisions of the *EPA* that apply to this proceeding are:

### *EPA*

#### **Purpose of Act**

3 (1) The purpose of this Act is to provide for the protection and conservation of the natural environment.

#### **Definition**

47.1 In this Part, "environment" has the same meaning as in the *Environmental Assessment Act*.

#### **Purpose**

47.2 (1) The purpose of this Part is to provide for the protection and conservation of the environment.

**Application of s. 3 (1)**

(2) Subsection 3 (1) does not apply to this Part.

...

**Director's powers**

47.5 (1) After considering an application for the issue or renewal of a renewable energy approval, the Director may, if in his or her opinion it is in the public interest to do so,

- (a) issue or renew a renewable energy approval; or
- (b) refuse to issue or renew a renewable energy approval.

**Terms and conditions**

(2) In issuing or renewing a renewable energy approval, the Director may impose terms and conditions if in his or her opinion it is in the public interest to do so.

**Other powers**

(3) On application or on his or her own initiative, the Director may, if in his or her opinion it is in the public interest to do so,

- (a) alter the terms and conditions of a renewable energy approval after it is issued;
- (b) impose new terms and conditions on a renewable energy approval; or
- (c) suspend or revoke a renewable energy approval.

**Same**

(4) A renewable energy approval is subject to any terms and conditions prescribed by the regulations.

...

**Hearing required under s. 142.1**

145.2.1 (1) This section applies to a hearing required under section 142.1.

**What Tribunal must consider**

(2) The Tribunal shall review the decision of the Director and shall consider only whether engaging in the renewable energy project in accordance with the renewable energy approval will cause,

- (a) serious harm to human health; or
- (b) serious and irreversible harm to plant life, animal life or the natural environment.

...

**Powers of Tribunal**

- (4) If the Tribunal determines that engaging in the renewable energy project in accordance with the renewable energy approval will cause harm referred to in clause (2) (a) or (b), the Tribunal may,
- (a) revoke the decision of the Director;
  - (b) by order direct the Director to take such action as the Tribunal considers the Director should take in accordance with this Act and the regulations; or
  - (c) alter the decision of the Director, and, for that purpose, the Tribunal may substitute its opinion for that of the Director.

## **Discussion, Analysis and Findings**

### **Issue 1: The Tribunal's Jurisdiction to Consider the Approval Holder's Mitigation Plans**

#### *The Parties' Submissions*

[11] APPEC submits that the Tribunal does not have jurisdiction to consider the Approval Holder's proposed mitigation plans. APPEC argues that the proposed changes to the REA will alter the Project to such a radical degree that the Project will be significantly different from that originally approved by the Director. According to APPEC, s. 14 of the *EPA* requires consideration of whether the altered Project will cause an "adverse effect", which only the Director has jurisdiction to determine; therefore, it submits, the Tribunal must either not proceed or must remit the REA to the Director. APPEC submits that remitting the REA to the Director will allow for review, public comment and consultation, and an opportunity for affected persons to appeal, which aligns with procedural rights in the *EPA*, O. Reg. 359/09, and the *Environmental Bill of Rights, 1993* ("EBR").

[12] APPEC further argues that the Tribunal does not have jurisdiction to approve what is effectively a new renewable energy approval without a review by the MOECC. APPEC submits that in *SLWP Opposition Corp. v. Ontario (MOECC)*, [2016] O.E.R.T.D. No. 42 ("*SLWP*"), the Tribunal accepted that proposed renewable energy approval revisions were akin to an application for an amendment to the approval under s. 47.5(3)

of the *EPA* and that the Tribunal in *SLWP* heard evidence from the MOECC reviewer, which was not provided for in this proceeding.

[13] The Director submits that the Tribunal has jurisdiction to make a decision in this matter. The Director argues that the Approval Holder's proposed mitigation plans result in modifications to the operation of the Project and do not radically alter the Project itself. The Director submits that the remedy proposed in *SLWP* altered the configuration of that project, including removing a turbine and an access road, rerouting two other access roads, reducing the area of woodland to be cleared, replacing above-ground transmission lines with underground cables, and transplanting a significant number of mature trees. According to the Director, in that case, the MOECC reviewer testified that, had the revisions been submitted as an application for an amendment to the renewable energy approval, the MOECC would not have required further public consultation under the *EBR*, "primarily because the amendments reduced the impact of the Project". The Director further submits that the remedy phase of this proceeding has provided the public an opportunity to comment on the proposed mitigation measures.

[14] The Approval Holder submits that the Tribunal has jurisdiction to consider the proposed mitigation plans and that APPEC's argument is, in substance, not about jurisdiction but about what the appropriate remedy should be. The Approval Holder notes that, in its June 2016 Order, the Tribunal acknowledged that a proposed remedy involving a change in the configuration of the Project or a significant change in the REA may require new or revised technical reports and further review and public comment; however, in this case, because no significant changes to the Project infrastructure are proposed, requiring the Director to reconsider the REA is not necessary. In addition, the Approval Holder argues that reconsideration by the Director and a further appeal is without precedent and would result in a waste of the parties' and public resources in the circumstances of this proceeding.

### *Analysis and Findings*

[15] Section 145.2.1(4) of the *EPA* provides that when the Tribunal determines that engaging in a renewable energy project in accordance with an approval will cause the harm outlined in s. 145.2.1(2), the Tribunal may do one of the following: (a) revoke the decision of the Director; (b) by order direct the Director to take such action as the Tribunal considers he or she should take in accordance with the *EPA* and the regulations; or (c) alter the decision of the Director and, for that purpose, may substitute its opinion for that of the Director. This provision affords the Tribunal broad discretion as to the remedy it orders. As the Divisional Court noted in *Ostrander Point GP Inc. v. Prince Edward County Field Naturalists*, [2014] O.J. No. 772, at para. 89, “[i]t is hard to think of language that could be more clear regarding the Tribunal’s authority in this regard”.

[16] In its June 2016 Order, the Tribunal stated the following at para. 51:

In determining whether to alter the Director’s decision under s. 145.2.1(4)(c) or direct the Director to take action under s. 145.2.1(4)(b), relevant considerations include the extent of the proposed changes and whether additional in-depth study, technical review or public input is necessary in order to understand their effectiveness and implications and to preserve the public’s procedural rights. The Tribunal must consider each option, its appropriateness and the ramifications on a case-by-case basis. However, there is guidance in the statute and O. Reg. 359/09 supporting detailed assessments, public review and rights of appeal. If, for example, a proposed remedy involves a change in the configuration of a project or a significant change in the approval, it is likely that new or revised technical reports and further review and public comment will be needed to fully understand the impacts of such a change. In such cases, the Director is able to draw on the MOECC’s expertise and resources when assessing an amendment and must comply with the public participation and notice provisions of the EBR, which are neither available nor possible for the Tribunal to use or undertake under s. 145.2.1(4). The Tribunal should be careful not to disregard these safeguards too readily.

[17] This statement indicates that the Tribunal considers that the nature and extent of the proposed changes may be relevant to its determination of what is an appropriate disposition of this proceeding. APPEC, however, goes further, arguing that where a proposed remedy would significantly alter an approved project, the Tribunal loses its jurisdiction to consider the proposed remedy and is mandated to remit the matter to the Director.

[18] The Tribunal has considered proposals for altering approved projects at the remedy phase, that is, following a finding that projects will cause the requisite harm in s. 145.2.1(2), in very few cases to date. In *SLWP*, the Tribunal considered all of the evidence presented regarding a proposed remedy, which included changes in the components and configuration of the project and additional conditions in the approval, and exercised its discretion to order the Director to amend the renewable energy approval in accordance with the approval holder's proposal. The Tribunal noted, at para. 10, that the Director treated the proposed changes as "akin to an application for an amendment under s. 47.5(3) and evaluated them in that manner" and provided evidence from an MOECC reviewer. In *Prince Edward County Field Naturalists v. Ontario (Ministry of the Environment and Climate Change)*, [2016] O.E.R.T.D. No. 25 ("*PECFN*"), the Tribunal considered additional evidence regarding proposed changes to the renewable energy project and the approval and exercised its discretion to revoke the approval. In neither case did the Tribunal determine that the nature and extent of the proposed changes affected its jurisdiction.

[19] In determining an appropriate remedy, the legislation does not limit the Tribunal to considering only what is in the renewable energy approval or only information that was before the Director when the approval was issued. Moreover, there is nothing in the plain wording of s. 145.2.1, or any other provision of the *EPA*, that sets a threshold for the significance of a proposed alteration to a project or a mitigation measure, beyond which the Tribunal loses jurisdiction to make any of the orders outlined in s. 145.2.1(4) and is required to remit a proposed remedy to the Director. Section 145.2.1(4) not only expressly authorizes the Tribunal to direct the Director to take certain action, but also to

alter the decision of the Director and substitute its opinion for that of the Director. If the Legislature had intended to mandate that a project be remitted to the Director, it could have provided for that, and could have outlined the circumstances in which that requirement would apply; however, it did not.

[20] The Tribunal finds that it has jurisdiction to consider the Approval Holder's proposed mitigation plans and to dispose of the proceeding in accordance with s. 145.2.1(4) of the *EPA*.

## **Issue 2: Standard of Proof under s. 145.2.1(4) of the *EPA***

### *The Parties' Submissions*

[21] APPEC submits that the standard of proof should be that the evidence demonstrates that the proposed remedy will cause no harm to plant life, animal life or the natural environment. APPEC notes that in the first phase of a hearing under s. 145.2.1, the onus is on an appellant to prove that engaging in a renewable energy project in accordance with an approval "will cause" serious harm to human health or serious and irreversible harm to plant life, animal life or the natural environment. APPEC argues that the standard of proof in the remedy phase should be the same, albeit that the onus should shift to respondents. APPEC submits that rulings made by the Tribunal in previous cases, to the effect that speculation, unproven assertions and evidence proving only the potential for harm do not meet the standard, should apply to respondents with respect to evidence in support of a proposed remedy.

[22] The Approval Holder agrees that respondents bear the onus of proof with respect to the remedies they propose, but submits that the standard of proof is the balance of probabilities, not a standard of absolute proof of no harm. The Approval Holder argues that it bears the onus of demonstrating that the proposed remedies will address the harms identified in the Tribunal's February 2016 Order so that the Project will no longer cause the specific serious and irreversible harms identified by the Tribunal. If the

Appellants allege that the proposed remedies will lead to new effects, the Approval Holder submits that the Appellants would then have the onus of proving that engaging in the revised Project in accordance with the amended REA will cause serious and irreversible harm.

[23] The Director submits that the Legislature did not include a special standard of proof for the remedy provisions in s. 145.2.1(4) of the *EPA*, so the intention was to follow the usual approach, that is, the onus of proof is on the party that asserts a proposition to prove it, on the standard of the balance of probabilities. The Director submits that in *PECFN*, all parties agreed to this approach, but went on to make arguments for a different onus for particular remedies. The Director refers to the Tribunal's findings in that case, where it stated that this was neither necessary nor helpful.

### *Analysis and Findings*

[24] Section 145.2.1(2) requires the Tribunal to review the decision of the Director and consider only whether engaging in the renewable energy project in accordance with the renewable energy approval will cause serious harm to human health or serious and irreversible harm to plant life, animal life or the natural environment. In the February 2016 Order, the Tribunal made the determination that the Project will cause serious and irreversible harm to plant life, animal life or the natural environment. Under s. 145.2.1(4), each party now has the onus of demonstrating why its preferred remedy (of those enumerated in s. 145.2.1(4)) should be ordered by the Tribunal.

[25] APPEC argues that the Tribunal has determined the onus of proof for the remedy phase, and APPEC now seeks to raise the issue of standard of proof. In its June 2016 Order, the Tribunal ruled on the issue of onus of proof but also stated that the standard of proof was the balance of probabilities. In the absence of any statutory direction, this ruling was based on the general premise that the person who asserts a proposition has the onus of proving it on the balance of probabilities. The Tribunal stated, at para. 53:

The parties are in agreement that each party advancing a remedy bears the onus of proving, on a balance of probabilities, that its proposed remedy is appropriate. This was the approach taken by the Tribunal in *PECFN*. This is the approach that will be followed in this proceeding.

[26] In *PECFN*, the Tribunal stated, at para. 67:

The Tribunal's remedial powers are discretionary under s. 145.2.1(4). Unlike the statutory onus placed on an appellant to prove the harm test, determining the "onus" in regards to the Tribunal's remedial powers does not add anything to the general proposition that a party must prove what it asserts. At the end of the day the Tribunal determines the appropriate remedy by exercising its discretion on the basis of the parties' submissions on the evidence, as provided on a balance of probabilities.

[27] In that case, the Tribunal weighed all of the evidence presented by all of the parties and concluded, at para. 135:

In this remedy hearing under s. 145.2.1(4), the Tribunal has found that Ostrander and the Director have not proven, on a balance of probabilities, that the remedy they propose, consisting of mitigation measures ..., will protect Blanding's turtle from serious and irreversible harm that would be caused by the Project due to road mortalities, predation and poaching.

The Tribunal went on to consider whether proceeding with the project, when it will cause serious and irreversible harm to a SAR and its habitat, would be consistent with the purposes of the *EPA* and the public interest, and concluded that it would not. It exercised its discretion and determined that the appropriate remedy was revocation of the approval.

[28] As noted, the Tribunal stated in its June 2016 Order that it will follow a similar approach to the evidence in this proceeding. The Tribunal determined that it would consider evidence and submissions addressing the following issues: each party's preferred remedy and proposed measures; the effectiveness of the proposed measures; the impacts and implications of the remedy and measures, including the potential for unanticipated and unstudied impacts; alternative remedies, their effectiveness and

impacts; and how specific principles and policies the parties consider relevant apply to the disposition of this proceeding. The Approval Holder has put forward mitigation plans to address the Tribunal's findings in its February 2016 Order that the Project will cause serious and irreversible harm to LBB and Blanding's turtle. The Approval Holder and the Director have led expert evidence in support of the position that the mitigation plans will effectively address the harms identified by the Tribunal and submit that the Tribunal should alter, or order the Director to alter, the REA as proposed by the Approval Holder and allow the Project to proceed. The Appellants have countered with evidence that attempts to refute that position and submit that the REA should be revoked. The Tribunal must exercise its discretion and determine what the appropriate remedy should be, in light of the purpose and provisions of the *EPA*, applicable policy and the public interest. The standard of proof for each party advancing a remedy is the balance of probabilities.

### **Issue 3: The Adequacy of the Approval Holder's Mitigation Plan for LBB**

#### *Evidence*

[29] The Approval Holder submitted a revised "Mitigation Plan for Operation of the White Pines Wind Energy Project" ("Revised Stantec Plan") developed by its consultant, Stantec Consulting Ltd., dated July 21, 2016. It requests that the REA be amended to add a new Condition J7.1, which would require implementation of the measures in the Revised Stantec Plan. These measures include operational curtailment of all turbines, an expanded mortality monitoring and response protocol, and establishment of a technical advisory committee to analyze data and recommend modifications to the plan.

[30] The Approval Holder filed an affidavit and a reply witness statement of Dr. Scott Reynolds, which together provided opinion evidence in support of the Revised Stantec Plan. The Approval Holder requests that Dr. Reynolds be qualified as "an expert on bats and the impacts of wind energy projects on bats". Dr. Reynolds supported his opinions with more than five volumes of references.

[31] According to Dr. Reynolds, the Revised Stantec Plan:

... represents an aggressive and pro-active effort to minimize the impact of the White Pines Project site on bats in general, as well as SAR bats in particular. Furthermore, the additional research conducted at the White Pines Project site ... will provide extensive data that can be used by the Technical Advisory Committee to refine and potentially augment the Mitigation Plan using an active adaptive management strategy. These data will also provide site-specific data which can be used by the [Ontario Ministry of Natural Resources and Forestry] and other agencies to inform project siting and operational criterion in the future.

[32] Dr. Reynolds stated his opinion that LBB are unlikely to be severely impacted by the Project, but that the Revised Stantec Plan provides “an extra layer of protection against incidental mortality by implementing a proven curtailment strategy at the onset of operation”. Dr. Reynolds opined that this curtailment strategy is an improvement over the existing REA requirements “because it provides the potential to reduce or eliminate mortality of SAR bats from the outset, rather than waiting until evidence of a mortality event”. It was Dr. Reynolds’ view that curtailment will occur “at a wind speed threshold that is at or above the highest level of curtailment that has proven to reduce bat mortality in general, and specifically the smaller myotome bats ...”.

[33] Dr. Reynolds also commented on the changes to the post-construction monitoring and response protocols. With respect to the proposed increase in the sampling radius for searching for dead bats, from 50 to 70 metres (“m”) from the base of turbines, Dr. Reynolds stated that, in his opinion, this reflects a 96% increase in sampling effort per survey and will be used to alleviate concerns expressed by the Tribunal in its February 2016 Order about mortality surveys underestimating total mortality. He also opined that the increase in sampling in the Revised Stantec Plan will collect additional data “that is both more intensive and extensive” than data required by the REA and will identify “the influence of environmental variables on bat mortality”, which can be used to inform mitigation at the Project and provide research findings to assist in the siting of other wind energy facilities.

[34] Dr. Reynolds expressed the opinion that establishment of the technical advisory committee and its use of adaptive management represents a conservative step “to minimize any impact on wildlife, including SAR bats”. Further, he stated that, in the event of a mortality event, the Revised Stantec Plan provides for enhanced curtailment and behavioural surveys to generate more data that the technical advisory committee can use to augment operational mitigation.

[35] Counsel for APPEC cross-examined Dr. Reynolds and filed a witness statement in the form of a letter from Dr. Brock Fenton. Dr. Fenton gave evidence in the earlier phase of this proceeding and was qualified at that time as a “biologist with expertise in bat behaviour and ecology”.

[36] In his letter, Dr. Fenton raised four concerns in response to the Revised Stantec Plan and Dr. Reynolds’ evidence. First, he stated that there are no pre-construction data available that provide adequate information on bat activity in the area of the Project and that pre-construction data are necessary to contextualize post-construction data. In his opinion, without these data, it is “impossible to conclude that the mitigation measures will be effective”. Second, Dr. Fenton disagreed with Dr. Reynolds’ comment that the Project will not significantly impact the local bat population, given the lack of pre-construction data on the local population. Third, Dr. Fenton stated that the Revised Stantec Plan does not indicate whether DNA bar coding will be used to identify bat carcasses and, without it, species identification will be very challenging. Fourth, Dr. Fenton stated that there is no rationale provided in the Revised Stantec Plan for using May 1 to September 30 as the active bat season, given that it is “more and more evident that bats are active all year around”. He referred to a study, C.L. Lausen and R.M.R. Barclay, “Winter bat activity in the Canadian prairies”, 84 *Can. J. Zool.* (2006), 1079-1086 (“Lausen et al.”), in support of this opinion.

[37] In his reply witness statement, Dr. Reynolds provided evidence to counter Dr. Fenton's concerns. In addition, in its order dated December 13, 2016, the Tribunal admitted a document into evidence entitled, Paul R. Lintott, et al., "Correspondence: Ecological Impact Assessments Fail to Reduce Risk of Bat Casualties at Wind Farms", 26 *Current Biology* (November 7, 2016), R1135-36 ("Lintott Correspondence"). By agreement of the parties, Table S1, referred to and hyperlinked in the Lintott Correspondence, was also admitted into evidence.

[38] The Director did not file any evidence on this issue; however, counsel for the Director cross-examined Dr. Fenton with respect to his letter.

### *The Parties' Submissions*

[39] The Approval Holder submits that the Revised Stantec Plan responds to and remedies the harms to LBB that were identified by the Tribunal in its February 2016 Order, and that it has met the burden of demonstrating the Plan's effectiveness. The Approval Holder submits that the Revised Stantec Plan is strongly supported by the expert opinion of Dr. Reynolds, that Dr. Reynolds' evidence was not challenged on cross-examination, that Dr. Fenton's concerns were comprehensively answered by Dr. Reynolds, and that there is no evidence before the Tribunal that the measures in the Revised Stantec Plan will create any potential for unanticipated and unstudied impacts. The Approval Holder argues that the Lintott Correspondence is not relevant to the mitigation measures proposed here, as it discusses only whether pre-construction surveys effectively predict post-construction bat mortality and does not study the effectiveness of any mitigation measures. The Approval Holder also points to the Tribunal's recent decision in *Association for the Protection of Amherst Island v. Ontario (MOECC)*, [2016] O.E.R.T.D. No. 36 ("*APA*"), respecting a wind energy project that will employ pro-active curtailment, as further support for its position that the Project as modified will not cause serious and irreversible harm to LBB. In that case, the Tribunal stated that the use of curtailment would effectively address a "large proportion of potential bat mortality...".

[40] It is the Director's submission that the Revised Stantec Plan "more than addresses the Tribunal's concerns regarding Little Brown Bats". The Director agrees with the proposed qualification of Dr. Reynolds and relies on his opinions, submitting that he was the only witness with expertise on the effects of wind turbines on bats and that his evidence was extensive, was backed by numerous studies and was not undermined on cross-examination. The Director submits that Dr. Fenton's concerns were addressed by Dr. Reynolds in his reply witness statement. In addition, the Director submits that Dr. Fenton's concern that the proposed mitigation measures will be inadequate because bats are active through the winter was not supported by evidence and was undermined on cross-examination when Dr. Fenton admitted that winter activity for LBB would be exceptional and that the period of highest activity is August to September.

[41] The Director argues that the Lintott Correspondence does not indicate that it was peer reviewed and makes only general and vague statements about mitigation. In particular, the Director submits, the supplemental Table S1 refers only to turbine siting and landscape enhancement as the mitigation measures adopted when pre-construction surveys indicated high bat activity and there is no study of curtailment as a mitigation measure. Like the Approval Holder, the Director also refers to the *APA/* decision as support for the Revised Stantec Plan. The Director submits that the proposed remedy will protect the environment and achieve the objectives of the *EPA*.

[42] Mr. Hirsch states that he has no objection to the proposed qualification of Dr. Reynolds. Mr. Hirsch submits that Dr. Reynolds overstates the reduction in bat mortality due to curtailment, noting that one study referred to by Dr. Reynolds found only a 60% reduction at a 5.5 metres/second ("m/s") cut-in speed, the same cut-in speed proposed by the Approval Holder, and not the up to 87% reduction that the other studies cited by Dr. Reynolds found. Mr. Hirsch disagrees with Dr. Reynolds' view that the Revised Stantec Plan is aggressive and proactive, arguing that it is essentially a monitoring plan which implements stringent mitigation measures only when mortality

occurs to LBB. Mr. Hirsch points to the statement in the Revised Stantec Plan to the effect that, while curtailment is well-studied with respect to migratory bats, the timing and conditions of curtailment to reduce risk to LBB are not well studied and the post-construction surveys will constitute an experiment on LBB to find out how to implement effective mitigation in the future. Mr. Hirsch argues that the Director should have undertaken, but did not, a detailed internal review of the proposed mitigation measures and that it is improper and confusing to incorporate the entire Revised Stantec Plan into the REA. He further submits that the Tribunal's findings in *APAI* are not relevant to the circumstances of this proceeding.

[43] APPEC makes no submissions with respect to Dr. Reynolds' proposed qualification. It submits that the proposed mitigation measures are not adequate to prevent harm to LBB and that most of what is proposed involves waiting for the species to be killed before action is taken. APPEC asserts that the lack of pre-construction data and inadequate post-construction monitoring makes it impossible to know the impacts of the Project on the local population of LBB.

[44] APPEC argues that the studies relied on by Dr. Reynolds do not support his opinions. For example, APPEC argues that one study relied on by Dr. Reynolds found that mortality was reduced by only 50% at a cut-in speed of 5.0 m/s, only 0.5 m/s less than that proposed by the Approval Holder, and concludes that the Approval Holder's plan would allow 40 to 50% or more of the local population of LBB to be killed by the Project. APPEC further submits that evidence in the main hearing indicated that bat activity peaks between 10 p.m. and 1 a.m., so that curtailing the turbines only until midnight will obviously kill more bats, perhaps by 33% more. In addition, APPEC submits that curtailing the turbines only between May 1 and September 30 ignores Dr. Fenton's opinion that bats are active throughout the year, and that Dr. Reynolds agreed that bats are active in the winter. APPEC submits that Dr. Fenton's central concern is the lack of pre-construction surveys but the Revised Stantec Plan does not include them. APPEC also submits that the enhanced monitoring protocol does not respond to the Tribunal's concerns about search efficiency.

[45] In reply to Mr. Hirsch, the Approval Holder submits that Mr. Hirsch misconstrues Dr. Reynolds' opinion about the body of scientific literature on the issue of curtailment but he led no evidence to rebut his opinion, nor did he cross-examine Dr. Reynolds. The Approval Holder asserts that Mr. Hirsch mischaracterizes the findings of the studies relied on by Dr. Reynolds and fails to acknowledge findings that support Dr. Reynolds' opinions and overall conclusion.

[46] In reply to APPEC, the Approval Holder submits that APPEC "argues its case by selective citing, misdirection and rhetoric". According to the Approval Holder, APPEC misstates that the proposed mitigation measures are not proactive, are not in use anywhere and contradict known science. The Approval Holder further asserts that APPEC is cherry-picking data from the studies relied on by Dr. Reynolds, but failed to ask him any questions about these studies on cross-examination and failed to have its witness provide evidence on them. The Approval Holder also submits that APPEC misquotes Dr. Reynolds with respect to winter activity of bats and makes mistaken claims about the Lintott Correspondence.

[47] In reply to Mr. Hirsch, the Director asserts that it would not be improper or uncommon to incorporate by reference other documents into the REA.

### *Analysis and Findings*

[48] The Tribunal qualifies Dr. Reynolds as an expert on bats and the impacts of wind energy projects on bats for the purpose of providing opinion evidence.

[49] In its February 2016 Order, the Tribunal found that engaging in the Project in accordance with the REA will cause serious and irreversible harm to LBB, a SAR classified as "endangered" in Ontario, due to collision mortality over the life of the Project. With respect to mitigation measures, the Tribunal stated the following:

147 All of the witnesses agreed that readily available mitigation measures are effective in preventing bats from colliding with operating wind turbines. The period of greatest concern for resident bats appears to be during their active season, particularly after sunset in the summer months.

148 Under Condition J6 of the REA, mitigation includes adjustments in the wind speed at which the wind turbines start to rotate, known as “cut-in speed,” and adjustments in the pitch of the wind turbine blades, known as “feathering”, between sunset and sunrise from July 15 to September 30 for the operating life of the facility. This is because bats are not active in high wind speeds or during the day. Additional monitoring of the effectiveness of these measures is also required.

149 Under the REA, these mitigation measures must be taken only when bat mortality reaches the threshold of 10 bats, of whatever species, per turbine per year. ... There is no requirement in the REA that mitigation be undertaken immediately when a single dead Little Brown Bat is found or that these measures are to be used routinely as a preventative measure to protect this endangered species.

...

151 The Approval Holder’s OMP was prepared to satisfy the mitigation plan requirements in s. 23.20 of O. Reg. 242/08 [under the *Endangered Species Act, 2007*]. This document was prepared after the REA was issued and does not form part of it. It sets out mitigation measures and other commitments made by the Approval Holder that are in addition to the measures in the REA. ... In the OMP, action is triggered if one or more Little Brown Bat or other endangered bat fatalities are recorded at a single turbine within one monitoring year. If one fatality is recorded, it is viewed as an “isolated” impact and fatality monitoring will be increased ... If two or more fatalities are recorded at that turbine in the same year, then mitigation measures will be triggered, including the preparation of behaviour surveys, habitat identification and mapping as well as curtailment of turbine operation between sunset and midnight for that season. ...

...

153 The Tribunal ... finds in the present case that the Approval Holder’s OMP, while a significant improvement over the provisions in the REA, will not minimize Little Brown Bat mortality. Given the challenges in accurately detecting Little Brown Bat fatalities ... and the thresholds set in the mitigation plan focusing on fatalities per turbine, the actual number of fatalities that are likely to occur across the Project site without mitigation actions being taken would be, over the life of the Project, enough to adversely affect the small population of Little Brown Bat in the area.

[50] In the remedy phase, the Approval Holder proposes that the measures in the Revised Stantec Plan be incorporated into the REA. These measures build on those in the REA and the original Operational Mitigation Plan (“OMP”). The new measures include operational mitigation, enhanced monitoring and response protocols, establishment of a technical advisory committee, and adjustments to the OMP as needed to respond to bat fatalities.

[51] The specific operational mitigation being proposed is for turbines to be feathered (that is, angled so that they do not rotate) below a wind speed of 5.5 m/s and to not begin to operate until a wind speed of 5.5 m/s is reached. This will apply to all turbines in the Project from May 1 through September 30, from sunset to midnight, from the start of operations. Unlike the conditions in the REA and the original OMP, these measures do not depend on the discovery of any bat fatalities, but will be required from the outset of operations and will continue for the entire life of the Project. These measures respond directly to the Tribunal’s finding that without routine curtailment as a preventive measure, the Project will, over its operating life, cause serious and irreversible harm to the local population of LBB.

[52] Under the enhanced response protocol, if even one SAR bat fatality is recorded, these operational restrictions will be expanded. For example, if a single bat SAR fatality is recorded at a turbine, operational curtailment of that turbine will be extended from midnight to sunrise and will remain in effect until September 30 of that year. If two to three fatalities of the same species are discovered at the same turbine, operational curtailment will be extended to October 31 of that year. If four fatalities occur in one year or three fatalities occur over more than one year, increased curtailment will be implemented for the life of the Project.

[53] The enhanced monitoring protocol expands the search radius around each turbine from 50 m to 70 m and increases the frequency of search. There are two protocols for monitoring the turbines for bird and bat mortality: the standard Environmental Effects Monitoring Plan (“EEMP”) and the species-specific monitoring for

SAR. The EEMP monitoring will be conducted in accordance with the Ministry of Natural Resources and Forestry's ("MNRF") *Bats and Bat Habitats: Guidelines for Wind Power Projects* (MNRF, 2011) ("MNRF Bat Guidelines"), at 10 turbines twice per week from May 1 to October 31 for the first three years of operation. Monitoring for SAR bats will occur daily from mid-April to the end of October at a subset of ten wind turbines for the first full year of operation. A 70 m search radius will be examined and genetic analysis will be conducted if the species cannot be identified. In subsequent years, all 17 non-EEMP turbines will be searched.

[54] Under the Revised Stantec Plan, surveys will increase in frequency and extent when mortality at the different thresholds noted above is recorded, in addition to enhanced operational curtailment. Also proposed are behavioural studies and establishment of a technical advisory committee, composed of different stakeholders and an independent bat expert, which will analyze the survey data and develop refinements and adjustments in the mitigation plan. Dr. Reynolds refers to this approach as an "active adaptive management strategy".

[55] Dr. Reynolds stated his opinion that "the modified Mitigation Plan represents an aggressive and pro-active effort to minimize the impact of the White Pines Project site on bats in general, as well as SAR bats in particular". He further stated that it "provides an extra layer of protection against incidental mortality by implementing a proven curtailment strategy at the outset of operation". It was his opinion that curtailment is "the only proven mitigation measure that has shown 'substantial reductions in fatality of bats'... Although these measures were originally intended to reduce the impact of wind development on the migratory tree bats, they have proven equally effective at reducing the impact of wind development on little brown [bat]". He relied on a series of studies in support of his opinion.

[56] During his cross-examination, Dr. Reynolds was asked no questions either about his opinion with respect to the impact of curtailment on bat mortality or about the content of the studies he relied on in forming his opinion. Dr. Fenton did not address the issue

of curtailment in his evidence, nor did the Appellants provide any other study to the Tribunal that addresses it. Thus, Dr. Reynolds' opinion on this point is uncontradicted by any other expert evidence.

[57] In their final submissions, Mr. Hirsch and APPEC raise questions about the studies relied upon by Dr. Reynolds, in particular Jeff Gruver, et al., "Summary and Synthesis of *Myotis* Fatalities at Wind Facilities with a Focus on Northeastern North America" (West Inc., April 13, 2015) ("Gruver et al."). APPEC argues that this study does not support Dr. Reynolds' opinion that the curtailment proposed by the Approval Holder would significantly reduce mortality of LBB. Mr. Hirsch and APPEC submit that most of the studies conducted to date have not isolated LBB mortality and, for bats generally, only show reductions in mortality of about 50-60%, which they argue would permit 40-50% of the local population of LBB to be killed by the Project.

[58] Dr. Reynolds relied on multiple studies to support his conclusion. In a study he himself conducted, "Monitoring the Potential Impact of a Wind Development Site on Bats in the Northeast", 70:5 *J. of Wildlife Management* (2006), 1219-1227 ("Wind Power and Bats"), he found that most bat activity occurred when daily mean wind speeds were below 5.4 m/s. The studies to which he referred in his evidence identify low wind speed as an important factor influencing bat mortality. For example, one study, E. B. Arnett, et al., *Relationships between Bats and Wind Turbines in Pennsylvania and West Virginia: An Assessment of Fatality Search Protocols, Patterns of Fatality, and Behavioral Interactions with Wind Turbines* (Bat Conservation International, June 2005), reported that "the majority of bats were killed on low wind nights when power production appeared insubstantial, but turbine blades were still moving", and that "[f]actors relating to wind speed were significantly related to bat fatality and all values indicated that higher wind speeds were associated with lower fatality rates". Gruver et al., at p. 11, reported that "all studies that addressed the relationship between bat fatalities and weather variables found that the majority of *Myotis* bats were killed during nights with low wind speeds, typically less than 6.0 m/s for at least part of the night".

[59] The studies of the impact of curtailment on mortality used controls and a range of cut-in speeds. The conclusion from all of the studies provided is that curtailment above the manufacturers' cut-in speed (typically about 3.5 m/s) reduces bat fatalities. Most of the studies that tested different cut-in speeds also indicated that increasing the cut-in speed, particularly when combined with blade feathering below the cut-in speed, can further reduce fatalities. In E.B. Arnett, et al., "Altering turbine wind speed reduces bat fatalities at wind-energy facilities", 9:4 *Frontiers in Ecology and the Environment* (2011), 209-214, the authors reported reductions ranging from 44-93% compared to controls, but no significant difference between cut-in speeds of 5.0 m/s and 6.5 m/s, whereas other studies reviewed in E.B. Arnett, et al., *A synthesis of operational mitigation studies to reduce bat fatalities at wind energy facilities in North America* (Bat Conservation International, 2013) ("Arnett 2013"), did report a material difference between 5.0 m/s and 6.5 m/s in several of the studies reviewed. In R.E. Good, et al., *Bat Monitoring Studies at the Fowler Ridge Wind Farm, Benton County, Indiana: April 1 – October 31, 2011* (WEST Inc., January 31, 2012), the authors reported reductions in fatalities of 36%, 57% and 73.3% when the cut-in speed was raised to 3.5 m/s, 4.5 m/s and 5.5 m/s, respectively, and was combined with feathering below the cut-in speed. That study reported similar results between the use of both feathering and a 5.5 m/s cut-in speed and the use of a cut-in speed of 6.5 m/s without feathering. According to Gruver et al., ten studies of curtailment, at wind speeds ranging from 3.5 to 6.9 m/s, reported mean reductions in bat mortality ranging from 36% to 89% compared to the controls. In a study conducted in Ontario, at Wolfe Island, uncontrolled turbines were compared with turbines curtailed to 4.5 m/s and 5.5 m/s (Stantec Consulting Ltd., *Wolfe Island Wind Plant Post-Construction Follow-up Plan, Bird and Bat Resources, Monitoring Report No. 6, July – December 2011* (Stantec, 2012) ("Wolfe Island Report")). The study found that uncontrolled turbines saw twice as many fatalities as curtailed turbines, with somewhat higher mortality at 4.5 m/s than at 5.5 m/s; however, fatalities were too low for them to do a thorough statistical analysis.

[60] Thus, the studies relied on by Dr. Reynolds consistently show that curtailment of turbines reduces bat mortality, including LBB mortality. This is in keeping with the testimony that the Tribunal heard in the main hearing on the merits of the appeals.

[61] The Tribunal notes that under O. Reg. 242/08, adopted under the *Endangered Species Act, 2007*, “reasonable measures” to avoid mortality, including some level of curtailment, are required where wind facilities are likely to affect SAR bats. Section 23.20(11) of that regulation provides that, if SAR bats are identified in a notice of activity form as likely to be affected by a wind energy facility, the steps the person operating the wind facility “must take” to “minimize the adverse effects of the operation” of the facility on SAR bats include:

1. implementing reasonable measures in the wind facility to avoid the killing, harming or harassing of members of the species such as,
  - i. adjusting the blades of wind turbines,
  - ii. adjusting cut-in speed of wind turbines, and
  - iii. periodically shutting the turbines down during times of day or of the year when the risk of killing, harming or harassing the species is highest.
- ...
4. If the person discovers that the steps described in paragraphs 1 to 3 or in the mitigation plan have not been effective in minimizing the adverse effects ... on the species, the person shall,
  - i. take such actions as are necessary to increase the effectiveness of those steps, or
  - ii. take such other reasonable steps as may be necessary to minimize the adverse effects ... on the species.

[62] O. Reg. 242/08 does not specify any details, or minimum standards, for operational curtailment. The MNR Bat Guidelines, applicable to bats generally, recommend raising the cut-in speed to 5.5 m/s. In *Fata v. Ontario (Ministry of the Environment)*, [2014] O.E.R.T.D. No. 42, the Tribunal recommended that a provision be included in the mitigation plan “to require a cut-in speed of 5.5 m/s for all turbines in the Project during known activity periods of the little brown bat, until such time as the Project-specific data gained through post-construction monitoring establishes there is no need to do so...”. In *APAI*, the Tribunal found, referring to the mitigation plan for that renewable energy approval, that feathering turbine blades below a wind speed of 3.0

m/s would, in the circumstances of that case, address a significant portion of potential SAR bat mortality, such that serious and irreversible harm to those species was not likely to occur.

[63] In this case, the Appellants question how much of a reduction in LBB mortality, below what LBB would have otherwise experienced with uncontrolled turbines, can be expected at the proposed cut-in speed of 5.5 m/s, and whether that level of reduction will prevent harm to the local population. The Appellants also question the other curtailment parameters, in particular, the season of May 1 to September 30 and the hours of sunset to midnight.

[64] The studies provided to the Tribunal show that curtailment in the range of 5.0 to 6.5 m/s is effective in significantly reducing bat mortality generally. The evidence indicates that the impact of curtailment on LBB mortality is less well-studied than the impact on migratory bats, which are the type of bats most frequently killed by wind turbines. However, Gruver et al., in reviewing the studies of curtailment and LBB, concluded that curtailment above 4.5 m/s has resulted in reductions in LBB mortality above 90%. That report states, at p. 12:

It stands to reason that reductions in overall bat fatality rates will be reflected in similar or greater reductions of *Myotis* fatality rates. One might expect a greater proportional reduction in *Myotis* fatalities at a given cut-in speed adjustment level because of the generally low incidence of *Myotis* bat fatalities ... and the general ecology of this group, which is adapted for foraging over water and/or near vegetation, as opposed to the open-air aerial hawking ... strategy typically employed by the migratory tree bats... To investigate this, we compiled data on *Myotis* fatalities from the curtailment studies... We summarized the number and species of *Myotis* bats found as fatalities at normal cut-in speed (typically 3.5 m/s), those found at turbines curtailed at or below 4.0 m/s ... and/or those found at turbines curtailed at or above 4.5 m/s ... Based on only the pre-[white nose syndrome] data, curtailment speeds at or above 4.0 m/s, or feathering under normal cut-in speed, reduced the number of *Myotis* carcasses by 92.8%, and curtailing at 4.5 m/s or higher reduced the number of *Myotis* carcasses recorded by 94.4%.

[65] As already noted, Dr. Reynolds was not cross-examined on this study and Dr. Fenton offered no opinion on it or any of the studies assessing curtailment that Dr. Reynolds relied on.

[66] The Appellants argue that curtailment is required throughout the year because LBB are active throughout the year. Dr. Fenton referred to Lausen et al. to support his view that LBB are active all year, contrary to the prevailing view that these bats are inactive in winter. That study, conducted in Alberta, reported the first records of some species of bats flying out of their hibernacula during the winter on the Canadian prairies. They concluded that feeding was not the impetus for the winter flights they observed because insects were absent and the bats they trapped produced no feces. They speculated that dehydration may be a factor.

[67] The authors detected some bat activity in November and December, none from late December to late January, and some activity starting again in late January. Although there was some uncertainty, by species, the authors reported that they detected LBB only twice over three years of study, on March 6 and April 3 of one year. They speculated that this lack of LBB activity in winter was due to the smaller size and difference in ecology of LBB compared with other species. They reported:

Winter flight activity seems to vary with bat species and location. *Eptesicus fuscus* is described as a hardy species that is often found roosting in cold, dry conditions and whose winter activity has been observed previously. Because the frequency of arousals increases with body mass, the larger size of *E. fuscus* compared with *M. evotis* and *M. ciliolabrum* may explain why we detected more winter flights of *E. fuscus*. ... We detected only one winter flight of *M. lucifugus* [Little Brown Bat], a species that tends to cluster in large groups and one that roosts in high humidity hibernacula. It is possible that this species does not hibernate in large numbers in the [area studied]. Alternatively, its acoustic absence during most of the winter might reflect less frequent winter flights; evaporative water loss may be lower because of clustering, thereby reducing the need for winter flight [citations omitted].

[68] Early research done by Dr. Fenton reported “arousals” in hibernating LBB, which require considerable expenditures of energy. In his cross-examination, Dr. Fenton stated that LBB can only make it through the winter by minimizing the number of times they arouse from hibernation, ordinarily once every 90 days, because mere arousal, without flight, costs the energy that would normally cover 60 days of hibernation. According to Dr. Fenton, the effect of white nose syndrome is to cause LBB to arouse more frequently, depleting their energy stores more quickly, killing the bats while still in their hibernacula. Dr. Reynolds agreed that hibernating LBB can become active in winter, particularly as ambient temperature rises, but disagreed that this translates into an increased risk to them on the landscape due to collision with wind turbines. He cited “decades of research”, including Dr. Fenton’s own work, that has shown that LBB are primarily active on the landscape from late April/early May to September. This coincides with what the MNRF considers the active season for LBB.

[69] All of the evidence before the Tribunal indicates that bats, including resident bats such as LBB, are on the landscape by late April or early May, are most active in late summer and early fall, when they leave the area to swarm and begin their hibernation, and are unlikely to be out flying in winter. When questioned, Dr. Fenton agreed that July to September is the period of greatest LBB activity and that for them to be found flying outside of hibernacula in winter would be exceptional. Other evidence (including Bird Studies Canada, et al., *Wind Energy Bird and Bat Monitoring Database: Summary of the Findings from Post-Construction Monitoring Reports* (Bird Studies Canada, July 2016) (“Bird Studies Canada 2016”) and the Wolfe Island Report) also indicates that July through September is the period during which the overwhelming majority of bat mortality due to wind turbines occurs, for both resident and migrating bats. Dr. Reynolds stated that, at wind facilities in the United States that have searched for bat fatalities outside of the active season, very few have been found. This is similar to the data reported in Gruver et al., which found only 3.4% of LBB fatalities in the spring, that is, prior to July, in the Northeast United States, which was slightly higher than in other regions.

[70] APPEC argues that curtailment only from sunset to midnight will cause LBB mortality up to 33%. APPEC cites a statement in the original OMP, identifying the period from “sunset to 1 a.m.” as the most active period for LBB, and a requirement of curtailment from “sunset to sunrise” in the MNRF Bat Guidelines as evidence that curtailment only up to midnight will be inadequate. Dr. Fenton did not raise this as a concern in his evidence and Dr. Reynolds did not comment on this issue in his witness statements, nor was he asked about it during cross-examination.

[71] The Tribunal notes that some of the studies relied on by Dr. Reynolds refer to significant bat activity during the period of sunset to sunrise, including between midnight and sunrise. Data referred to in Scott Reynolds, *Multi-Year Acoustic Monitoring of Bats at the Maple Ridge Wind Project* (New York State Energy Research and Development Authority, December 2011) (“Maple Ridge Report”), at p. 10-13, demonstrated peak bat activity in the evenings, but continuing significant bat presence throughout the night. Arnett 2013 cited a study conducted at the Mount Storm, West Virginia wind facility. Over two years, turbines feathered below 4.0 m/s for the “first half of the night” (sunset plus five hours) were compared with those feathered for the “second half of the night” (sunrise minus five hours) and with controls. The study found that feathering only for the first half of the night reduced bat mortality by 47% and 72% in the first and second year, respectively, compared to the controls, while feathering only for the second half of the night reduced mortality by 22% and 50% in the first and second year, respectively, compared to the controls. In Howard P. Whidden, et al., *Examination of Bat Mortality at Penobscot Mountain Wind Farm, Luzerne County, Pennsylvania* (East Stroudsbury University of Pennsylvania, November 2008), at p. 57-59 and 66-67, data indicated in some circumstances an increase in bat activity as the night progressed, depending on elevation and temperature.

[72] Among studies that specifically address active times for LBB, Thomas H. Kunz and Edythe P. Anthony, *Variation in the Timing of Nightly Emergence Behavior in the Little Brown Bat, Myotis Lucifugus (Chiroptera: Vespertilionidae)* (Brown University, 1996), reported that the time at which LBB first emerge at night varies according to the

season, with earlier emergence in May (about 8:10 p.m. EDT), later emergence in mid-summer (about 9:40 p.m.) and progressively earlier emergence thereafter (about 7:40 p.m. on September 1). The authors also reported that the interval between sunset and the time by which half of the bats have emerged ranged from about 20 to 24 minutes and that the duration of emergence ranged from about 29 to 57 minutes, depending on location and weather. Another study, Robert M. R. Barclay, "Population Structure of Temperate Zone Insectivorous Bats in Relation to Foraging Behaviour and Energy Demand", 60 *J. of Animal Ecology* (1991), 165-178, reported that LBB activity tracks the activity of the insects they forage and that a "high abundance of aerial prey is temporary and drops by almost an order of magnitude a few hours after sunset...". In Dr. Reynolds' own study, *Wind Power and Bats*, he detected a "general decline in activity over the course of the night, with more bat passes early in the evening relative to the middle or late sampling periods". In his study, the "early" period was from 7 to 11 p.m.; however, bats, including LBB, continued to be detected in the "middle" period from 11 p.m. to 3 a.m. The MNRF identifies the "two to three hours after sunset" as the period in which LBB are most active. Although the MNRF's Bat Guidelines do not establish a standard for curtailment in all circumstances, they require operational mitigation from "sunset to sunrise" from July 15 to September 30 once a threshold mortality of 10 bats per turbine per year has been exceeded.

[73] The Tribunal finds that the evidence does not provide a scientific basis for using midnight as the time when curtailment measures should cease. The evidence indicates that LBB are active later in the night, even if they are most active in the hours just after sunset.

[74] Thus, if the timing of curtailment is adjusted, the evidence before the Tribunal supports Dr. Reynolds' opinion that significant reductions in fatalities to bats, including LBB, to levels well below what would be expected with uncontrolled turbines, are likely to result from the operational curtailment proposed by the Approval Holder.

[75] It is still necessary to determine whether, even with significant reductions in fatalities, the Project will nevertheless cause harm to the local population of LBB, given the uncertainty in the size of the local population of LBB. In its February 2016 Order, the Tribunal found that there was insufficient information to estimate the local population, but that due to the ecology of LBB, the type of habitat in the area of the Project, and the impacts of white nose syndrome, it is likely to be relatively small.

[76] The Revised Stantec Plan reported:

There is currently no available means to determine the specific local population size of bats... Given population estimates for bats are not currently available, an assessment of the likely relative impact of the mortality from operation of the facility to the populations of Little Brown [Bat], Northern Myotis and Eastern Small-footed Myotis is not possible at this time. ... As a result, post-construction monitoring at a specific facility is required to assess mortality to the three bat species at a particular facility. The anticipated effects of the operation of the White Pines Wind Project on [the three species] cannot be predicted with confidence, particularly given the influence of population declines due to [white nose syndrome]. Based on the existing numbers and patterns of observed mortality at operating facilities, it is expected that if mortality of Little Brown [Bat] occurs, it is likely to be infrequent and occur in relatively small numbers.

[77] Dr. Fenton opined that pre-construction surveys of bat activity are necessary to be able to predict post-construction fatalities and, because they were not done for the area of the Project, it is impossible to determine the effect of curtailment. And yet, the Lintott Correspondence concluded that the pre-construction surveys of bat activity they reviewed did not accurately predict post-construction bat activity or fatalities at 46 wind energy facilities in the United Kingdom. That report stated that collision risk is often inferred from activity prior to construction, but that sites assessed as of poor quality for bats prior to construction experienced fatalities following construction and, “even in those cases where high risk was correctly identified, the mitigation deployed did not avert the risk”. As pointed out by the Director, the mitigation measures deployed at those wind facilities appears to have involved turbine siting setbacks and landscape enhancements, not curtailment.

[78] The expert witnesses in the main hearing also expressed the view that pre-construction bat activity does not predict post-construction activity or mortality. This view is also found in studies cited by Dr. Reynolds. For example, in the Maple Ridge Report, Dr. Reynolds stated, at p. 58: “[i]t remains unproven that pre-construction monitoring can accurately predict post-construction bat fatalities”. Nevertheless, the Lintott Correspondence and other studies have concluded that despite this finding, pre-construction data may still be useful, including in indicating “the extent of curtailment that is required”. The Lintott Correspondence also emphasized the importance of post-construction mortality monitoring and a feedback mechanism, reporting:

Establishing the species assemblage at a site may nevertheless have some value in identifying the presence of species at high collision risk and/or of particular conservation concern in the region. In mainland Europe, automated systems using weather variables and site-specific post-construction bat activity data have been used to trigger turbine curtailments to minimize bat collisions. Pre-construction surveys may therefore still be useful as the data (e.g., nightly and seasonal peaks of activity) may provide an indication of the extent of curtailment that is required and therefore the economic viability of the project. Our results highlight the importance of longitudinal monitoring of major developments and a feedback mechanism for practitioners to share the success or failure of mitigation strategies.

[79] Dr. Reynolds agreed with Dr. Fenton that pre-construction data on bat activity can be informative, particularly at sites without any recent data; however, it was his opinion that there are sufficient recent data for the area around the Project, including from a survey conducted by Dr. Fenton himself in 2004 in the vicinity of the Project site (M. Brock Fenton, et al., *Bat Activity in the Area of the Proposed Royal Road Site, Prince Edward County, Ontario* (University of Western Ontario, 2004)). In that survey, the authors recorded very low bat activity in May and “much higher” activity in August. However, they concluded: “[t]he levels of bat activity at any of the Prince Edward County sites were much lower than we encountered at general feeding sites elsewhere in Ontario”.

[80] In addition, Dr. Reynolds pointed to post-construction mortality data from other Ontario wind farms. Dr. Reynolds opined that prior to white nose syndrome, LBB

experienced lower turbine mortality relative to their abundance on the landscape than did other types of bats. According to Dr. Reynolds, LBB represented about 27% of bat fatalities in eastern Canada at a time when they comprised at least 80% of bats on the landscape. He stated that the drop in fatalities recorded in recent years parallels the drop in population due to white nose syndrome and that it was his understanding that LBB fatalities have not been recorded at Ontario wind facilities since 2011. Bird Studies Canada 2016 presents data collected between 2007 and 2014. Averaged over that period, 11.7% of bat fatalities at Ontario wind facilities were LBB.

[81] The Appellants argue that the curtailment plan will at most reduce LBB fatalities by 50-60% from uncontrolled conditions, resulting in 40-50% of the local population being killed. This argument ignores the role of the enhanced monitoring and response protocols in detecting, and responding to, SAR bat fatalities. As noted above, the Revised Stantec Plan requires additional curtailment in the event of even one SAR bat fatality, and permanent additional curtailment in the event of three fatalities over more than one year or four within one year.

[82] The Revised Stantec Plan increases the search radius from 50 m to 70 m and increases the search frequency for the non-EEMP turbines. According to Dr. Reynolds, this results in an increase in search effort per survey by 96% over the original OMP. APPEC argues that the search radius remains inadequate, based on the recommendation of its witness from the main hearing that 80 m is the appropriate radius. Dr. Reynolds stated that his research showed that 21 wind projects in the United States and Canada had documented at least 95% of the bat mortality within 50 m of the turbine base, even when searching out to 120 m, and the majority within 40 m. He also cited the Bird Studies Canada 2016 report, which documented 72.4% of carcasses found within 35 m, and the Wolfe Island Report, which found 95% of carcasses within 40 m. He was not questioned during cross-examination about this opinion or the studies he cited in his evidence.

[83] In its February 2016 Order, the Tribunal expressed its concern that the search protocol in the EEMP and the original OMP would result in an underestimate in SAR bat mortality. The proposal would expand the extent and frequency of the searches for SAR bats, including LBB. Dr. Fenton only expressed a concern with whether genetic testing of carcasses would be included in order to identify LBB more accurately; he did not raise concerns about the other aspects of the search protocol, nor did he disagree with Dr. Reynolds' opinion.

*Summary of Findings on LBB Mitigation*

[84] The Tribunal finds that the Approval Holder's proposed curtailment measures are directed to the season when LBB are most active and that the proposed feathering and cut-in speed of 5.5 m/s are likely to significantly reduce LBB mortality over the life of the Project compared with uncontrolled turbines. The Tribunal finds that the Approval Holder's proposed search and response protocol and adaptive management strategies address several of the concerns raised in the Tribunal's findings in its February 2016 Order. There was no evidence before the Tribunal indicating that the proposed measures designed to address harm to LBB are likely to lead to adverse environmental impacts that were unanticipated and that require further study or review. However, the Tribunal finds that the evidence does not provide a scientific basis for using midnight as the time when curtailment measures should cease.

[85] The Tribunal finds that the evidence demonstrates, on a balance of probabilities, that implementation of the Revised Stantec Plan, if amended to require the period of curtailment measures to be from sunset to sunrise, is likely to significantly reduce LBB mortality over the life of the Project.

#### **Issue 4: The Adequacy of the Approval Holder's Mitigation Plan for Blanding's Turtle**

[86] At para. 277 of the February 2016 Order, the Tribunal found that “the upgrading of municipal roads and increased predation at the Project site will, more likely than not, cause serious and irreversible harm to Blanding’s turtle”. The reasons for these findings are found in that Order at paras. 264-5 (regarding serious harm caused by adult turtle road mortalities), paras. 268-9 (regarding serious harm caused by predation of turtle eggs), and para. 276 (containing findings that these serious harms will be irreversible).

#### *Evidence*

[87] The Approval Holder submitted to the Tribunal its mitigation plan entitled “Additional Avoidance and Mitigation Measures to Minimize Potential Impacts to Blanding’s turtle (*Emydoidea blandingii*)” (“NRSI Plan”) developed by its consultant, Natural Resource Solutions Inc. (“NRSI”), dated July 22, 2016. The Approval Holder requests that the REA be amended to add a new Condition L2, which would require implementation of the measures in the NRSI Plan. These measures include:

- construction modifications to access roads and other surfaces to prevent Blanding’s turtles from nesting in these areas, including changes to the design of:
  - roads by requiring greater road surface compaction;
  - road edges by using a buried shoulder technique with revegetation;
  - electrical safety zones around turbine bases, stairs, pad mount transformers, and substations by placing large stones in the electrical insulating rings around these features;
- vegetation restoration and monitoring along the edges of access roads;
- monitoring for turtle nesting;
- where Blanding’s turtle nests are found, nest protection using onsite nest caging followed by offsite egg incubation;

- alternatively, if incubation is not possible, onsite nest caging and monitoring;
- restoration of municipal road segments and intersections to pre-construction conditions, and re-seeding of shoulders to minimize traffic and vehicle speeds;
- vegetation inspection of temporary municipal road upgrades;
- pre- and post-construction video and topographical surveys of municipal roads to assist in ensuring that road segments are returned to their original conditions; and
- engagement of a site attendant to ensure all mitigation and monitoring is completed and logged properly.

[88] Several of the experts who gave opinion evidence in the remedy phase also provided evidence in the earlier phase of this proceeding. During that phase of the proceeding, Shawn Taylor, on behalf of the Approval Holder, was qualified as having expertise in the areas of ecological restoration and construction mitigation. Joe Crowley, who previously appeared for APPEC and now appears for the Director, was qualified as a herpetologist with expertise in Blanding's turtle. Kari Gunson, a witness for APPEC, was qualified as a road ecologist with experience evaluating the direct and indirect effects of roads on wildlife and their habitat. APPEC also brought forward two new witnesses to provide evidence on remedy in relation to the Tribunal's findings of harm regarding Blanding's turtle. APPEC proposed that Dr. Frederic Beaudry be qualified as an expert in Blanding's turtle and that Torben Aabo be qualified as a cabling engineer specializing in underground transmission and distribution systems. None of the parties contested these proposed qualifications and the Tribunal qualifies these witnesses as requested.

[89] Mr. Taylor stated that there are three specific components to the NRSI Plan: the development of access road beds that are generally inhospitable to turtle nesting; monitoring that will provide continuous feedback to the Approval Holder to determine

whether changes to mitigation measures are needed to protect the local Blanding's turtle population; and restoration of municipal road and intersection upgrades to pre-construction conditions as quickly as possible so that there is no net increase in the probability of Blanding's turtle road mortality above the current level.

[90] Regarding mitigation measures for the construction of access roads to inhibit nesting, Mr. Taylor stated that gravel surfaces would be compacted to a rate of 95% compaction, be built with minimal shoulders, and would have a geotextile grid built into the road base to inhibit Blanding's turtles from nesting on or near these surfaces. He said shoulders would be buried and, as turtle nests require exposure to sunlight to warm the surrounding soil, roadside verges would be seeded with a tenacious seed mix of vegetation to create shade. Mr. Taylor added that once the turbines are erected, pre-existing conditions would be restored.

[91] Mr. Taylor said monitoring would be conducted to ensure that vegetation along the verges of access roads and other graveled areas remain constant. He stated that nest searches and monitoring would also be done. He said night-time nest surveys would be conducted each year over a 10-week period from May to mid-July for the first three years of the Project and then every five years thereafter. He said that wildlife cameras would also be employed and that the Approval Holder would report results annually to the MOECC and the MNRF.

[92] Mr. Taylor said that nests found would be immediately protected from predators with cages and then, when possible, the eggs would be subsequently sent for incubation. He said eggs would be incubated and hatched at a wildlife rehabilitation facility designated by the Approval Holder. Mr. Taylor stated that the offspring would be reared at the facility to the juvenile stage of development and then released back to the area where the eggs were initially collected. He stated that research on Blanding's turtle "head-start" and caging programmes elsewhere have demonstrated successful results. He stated that the proposed measures for nest protection and egg incubation

represent an adaptive risk management approach that addresses changing probabilities of mortality and survivability risk over the life of the Project.

[93] Regarding the proposed restoration of municipal road segments to pre-construction conditions and the re-seeding of shoulders, Mr. Taylor stated that the primary roads to be used would not require upgrades apart from widening at 13 identified intersections. He said three secondary roads and three tertiary roads would be upgraded and then restored to their existing conditions as soon as possible after construction of the Project is complete. He said the secondary and tertiary road segments would be widened to 4.5 m, which may require base layer reconstruction to support the expected vehicle loads. He stated that the secondary roads would be covered with gravel and compacted and then once Project construction is completed, the widened band along either side would be re-excavated and replaced with soil, then seeded. For the tertiary roads, Mr. Taylor stated that they would be widened and have the existing surfaces covered with geogrid over geotextile filter cloth. He said the roadway would then be built over this with gravel. He stated that after construction of the Project is completed, the new roadway would be “taken up entirely” and the geotextiles would be rolled up for disposal. The NRSI Plan indicates that the 13 intersection improvements will require different solutions depending on existing road conditions but that most will be improved to a maximum turning radius of 50 m and that, following their use, will be scarified and the added gravel used for the improvements will be removed. Mr. Taylor said that, following removal of the upgrades, the verges of the municipal roads would then be re-seeded, resulting in the restoration of the original conditions. Mr. Taylor referred to work done at a wetland in Bowmanville as an example of similar measures being taken elsewhere. Mr. Taylor stated that it would take roughly three years for vegetation to return to pre-construction conditions. He said that, during this time period, the areas in question would be monitored and that post-construction conditions would be compared with pre-construction conditions through the use of video and topographic surveys undertaken before and after construction.

[94] Regarding the Approval Holder's proposed mitigation measures to reduce nesting on access roads and adjacent to Project components, Mr. Crowley for the Director stated that the compaction of gravel areas, creation of shoulderless roads and vegetating of the edges of the access roads "should result in a very low likelihood that Blanding's turtles will be attracted to and nest on or around the project features in question".

[95] Mr. Crowley opined that the Approval Holder's proposed nest monitoring programme "is sufficient to have a high likelihood of detecting nesting turtles if they are using the habitats in question". On nest protection measures, Mr. Crowley stated that Blanding's turtle nests are subject to very high predation rates and low hatchling success under natural conditions and that nest cages are an accepted conservation tool for mitigating the threat of nest predation with very high nest survival rates. He stated that burying cages to protect nests from poaching is an effective technique for protecting nests. He also stated that incubation of turtle eggs can dramatically increase turtle nest success and hatchling survival. He noted that several facilities in Ontario use this technique on Blanding's turtle eggs and that these head-start programmes are an accepted conservation tool for recovering turtle populations. Mr. Crowley opined that it is very unlikely that Blanding's turtles will nest in or adjacent to the Project's infrastructure and go undetected and that, based on the likely success of the proposed mitigation measures, there is no risk of an overall increase in nest predation at the Project site. He stated that if turtles nest on or near the Project infrastructure, the Approval Holder's proposed nest protection and egg incubation programme will result in a benefit to the local population.

[96] Regarding the Approval Holder's proposed mitigation measures to address Blanding's turtle road mortality on existing municipal roads, Mr. Crowley stated that returning these roads to their pre-construction state would effectively prevent an increase in the risk of Blanding's turtle road mortality as traffic speed and volume will not be changed in the long-term due to the Project. He stated the Approval Holder's

proposed road restoration work would be unlikely to damage or destroy Blanding's turtle habitat.

[97] On behalf of APPEC, Dr. Beaudry opined that it is probable that the Approval Holder's proposed compaction and installation of a geogrid "will deter Blanding's turtles from nesting on the roads" and that the road shoulder design and the re-vegetation management plans "appear capable of reducing the possibility of nesting".

[98] In his brief evidence, he expressed general concerns regarding the adequacy of the science behind the Approval Holder's proposed nest protection and egg incubation proposals and questioned whether these proposals would be effective.

[99] Regarding the Approval Holder's proposed measures to restore municipal road segments, Dr. Beaudry stated that the proposed restoration of tertiary roads "is particularly promising".

[100] Overall, Dr. Beaudry said the Approval Holder's proposed mitigation measures "are creative and designed with obvious consideration of Blanding's turtle biology". However, he opined that they should not be tested for the first time on a vulnerable population of Blanding's turtle such as the population at the Project site.

[101] On the proposed municipal road mitigation measures, Ms. Gunson stated that the measures would not prevent additional risk of road mortality. She said there would be twice the amount of construction in turtle habitat with both the upgrading and then restoration of the roads. She stated that the road upgrades would be in place for at least 18 months facilitating increased traffic volume and vehicle speeds and expose turtles to a heightened risk of road mortality over that time period.

[102] Ms. Gunson stated that the road upgrades and restoration would result in Blanding's turtle habitat degradation and destruction through the building of roads, driving over vegetation, creation of ruts, changes in hydrology, transport of

contaminants, and introduction of invasive plants. She further opined that the Project would attract tourists, causing increased traffic on the roads.

[103] Mr. Aabo stated that the buried electrical cable system for the Project must be designed so that there are no temperature increases at the cable locations. He expressed concerns regarding vegetation roots interfering with that system. He stated that if deep-rooted vegetation grows over the cables, it will absorb ground moisture and increase the thermal properties of the cable covering, which could adversely impact the operation of the electrical cable system. He stated that the types of vegetation planted over the cable trenches must be considered in the design of the cable circuit.

### *Submissions*

[104] The Approval Holder submits that its proposed avoidance and mitigation measures include both proactive measures to avoid harm and additional secondary measures and monitoring to be applied if enumerated trigger events occur. It argues that given their comprehensiveness, these measures will have an improved effect on the local Blanding's turtle population.

[105] The Approval Holder argues that its proposed measures build on those already in the REA, including: restrictions on the timing of construction work to avoid times when Blanding's turtles are active; use of road signage; training and education of onsite workers during Project construction; and site security, including gates at the entrances to access roads and a site attendant. The Approval Holder reiterates that its proposed mitigation and avoidance measures add to the REA's conditions by requiring measures to deter turtle nesting in proximity to roads by: compacting road surfaces; constructing shoulderless roads with an underlay of stone and geogrid to inhibit nesting; the use of vegetation with dense root structures; and the use of shade producing plants to reduce solar heat for nesting. It submits that necessary road upgrades for Project construction will be removed after construction is completed. It notes that a road use agreement with the municipality is needed, but is not in evidence before the Tribunal.

[106] The Approval Holder submits that its proposed avoidance and mitigation measures will require at least three years of road surface monitoring from May to mid-July each year to search for Blanding's turtle nests. The Approval Holder submits that monitoring will involve both on-the-ground personnel inspecting the roads as well as the use of wildlife video cameras. The Approval Holder submits that if nests are found, eggs will be taken offsite for incubation or alternatively nests will be protected with buried cages for protection from predators and poachers. The Approval Holder submits that a site attendant will be employed to inspect the entire Project site twice each week throughout the life of the Project.

[107] Regarding Dr. Beaudry's concern that the proposed measures should be evaluated on another species before they are applied to Blanding's turtles at the Project site, the Approval Holder submits that Dr. Beaudry did not elaborate on any weaknesses in the proposed measures or identify aspects of the NRSI Plan that require further evaluation. The Approval Holder submits that the NRSI Plan was "custom-designed" to address the circumstances at the Project site and the Tribunal's findings in the February 2016 Order.

[108] With respect to Mr. Aabo's evidence, the Approval Holder submits that it only raises concerns about impacts to the construction schedule and electrical cable performance and provides no explanation as to how these issues are relevant. The Approval Holder argues that these matters can be addressed during the engineering phase of the Project and are not relevant here.

[109] The Approval Holder submits that the NRSI Plan outlines specific avoidance and mitigation measures, identifies parties who are to be responsible for each of the proposed measures, and commits to ongoing monitoring. It argues that APPEC's evidence is vague, weak and speculative and provides no basis for questioning the effectiveness of the proposed measures. The Approval Holder further submits that

there is no evidence that the proposed measures will create any unanticipated or unstudied impacts.

[110] The Director argues that the Approval Holder's proposed avoidance and mitigation measures address the harms to Blanding's turtle identified in the Tribunal's February 2016 Order, do not create the potential for additional impacts on the environment, and achieve the *EPA's* objectives.

[111] The Director argues that any Blanding's turtle road fatalities that occur during the Project's construction periods will not be chronic or ongoing and will not adversely impact the local Blanding's turtle population.

[112] The Director submits that the Tribunal considered the impacts of construction in its February 2016 Order and found that by applying the measures set out in the REA, construction activity is not likely to cause serious harm to Blanding's turtles. The Director argues that there is no evidence to suggest that this conclusion would not also apply to the Approval Holder's proposed avoidance and mitigation measures for the restoration of the municipal roads.

[113] The Director argues that Ms. Gunson's evidence on construction impacts and habitat destruction is not relevant and should be disregarded. He argues that the issue before the Tribunal is road mortality and not the effect of roads generally. The Director submits that these issues have already been addressed by the Tribunal in its February 2016 Order and must not be re-litigated. He further submits that Ms. Gunson did not provide analysis or evidence to support her claims.

[114] The Director argues that the precautionary principle does not require absolute proof that no harm will occur. He submits that if the evidence before the Tribunal indicates that harm is unlikely, it is consistent with the precautionary principle to approve the activity. The Director submits that the evidence before the Tribunal demonstrates that harm is unlikely and that the proposed mitigation measures are likely to inhibit turtle

nesting and mitigate the harm of increased predation. He submits that the Approval Holder's proposed monitoring and nest protection measures further align with the principle. He submits that the proposed measures address the harms identified by the Tribunal and do not create the potential for new impacts on the environment. He argues that the Approval Holder's proposed remedies achieve both the objectives of environmental protection and the promotion of renewable energy and are thereby consistent with the regulatory framework for renewable energy development and the public interest.

[115] Mr. Hirsch argues that the Approval Holder's proposed measures have never been tried before and their effectiveness is untested. He states that the Approval Holder proposes to install fabrics under 6 kilometres ("km") of road, remove vegetation and then restore the roads to their former state. He submits that this will cause harm. He argues that the Approval Holder's proposed monitoring will interfere with Blanding's turtle nesting and that it is uncertain whether the Approval Holder's roadworks will prevent an increase in traffic on the roads. He submits that the Approval Holder's proposal to incubate eggs may be unsuccessful and could lead to a drop in the local Blanding's turtle population.

[116] Mr. Hirsch also submits that there is no evidence of any MOECC technical reviews of the Approval Holder's proposed avoidance and mitigation measures.

[117] APPEC argues that the Approval Holder's proposed avoidance and mitigation measures are experimental in nature and there is insufficient scientific support for them. APPEC argues that the Approval Holder's proposal to restore the upgraded municipal roads to their existing conditions is a radical approach that is untested in terms of its impacts on Blanding's turtles. APPEC also submits that vegetation management and gravel compaction work has never been attempted on the scale proposed by the Approval Holder or with Blanding's turtles. APPEC argues that the impacts of the Approval Holder's proposed vegetation restoration measures, including the use of non-native plants, have not been studied and could result in an alteration of the natural

balance in the area. APPEC submits further that the Approval Holder provided insufficient evidence to demonstrate that road surface compaction will inhibit turtle nesting. APPEC argues that the proposed monitoring, use of nest cages, egg incubation and head-start programmes have also never been tried, studied or proven successful. It further raises concerns arising from the possibility of flooding and the impacts of the proposed measures on species and the natural environment. APPEC argues that the proposed measures are experiments on a small and highly fragile population that will be extirpated if the experiments do not succeed. It argues that additional consideration of unanticipated and unstudied impacts of the proposed measures is necessary.

[118] APPEC also argues that Mr. Aabo's evidence indicates that vegetation planted over the Project's buried electrical cables may not allow the Project's electrical cable system to properly operate and that a third construction period may be necessary in order to install the electrical cables after the municipal roads are restored.

[119] APPEC submits that the cumulative environmental effects of having two or possibly three construction periods have not been studied and are unknown.

[120] Referring to *SLWP*, APPEC submits that the Approval Holder and the Director have failed to produce necessary evidence on the environmental effects of the proposed measures. APPEC submits that in *SLWP*, the Director called a senior reviewer from the MOECC Environmental Approvals Branch as a fact witness to give evidence on the effectiveness of proposed measures, but that this was not done in the present case.

[121] APPEC argues that the proposed measures must comport with the goals and objectives of the *EPA* and the MOECC's Statement of Environmental Values ("SEV"). It submits that this requires a precautionary approach. APPEC submits that the Approval Holder's proposed road work would require an environmental assessment to be completed, which has not been done. It also submits that the impacts of compacted

road surfaces on Blanding's turtle and the environmentally sensitive lands in the Project site have not been assessed.

[122] APPEC argues that the Tribunal's finding of serious and irreversible harm to Blanding's turtle in the February 2016 Order indicates that "far more than a threat exists". It argues that without any evidence from the Approval Holder on the impacts of its proposed avoidance and mitigation measures on Blanding's turtle, there is a lack of full scientific certainty that this species will not be adversely affected. It submits that "the precautionary approach strongly militates against any approval being granted without, at minimum, a better understanding of the proposed remedies and their effects, not only on Blanding's turtle, but other species". In terms of the ecosystem approach, APPEC argues that cumulative and other impacts must be considered.

#### *Analysis and Findings*

[123] In accordance with the ruling given at para. 35 of the June 2016 Order, the Tribunal must determine on the balance of probabilities whether the NRSI Plan effectively addresses the Tribunal's findings under s. 145.2.1(2) and does not create the potential for unanticipated and unstudied impacts.

[124] In the remedy phase of the proceeding, the Tribunal will not reconsider its findings of serious and irreversible harm. Rather, the focus in this phase is on determining what is an appropriate remedy. The Tribunal will consider the evidence presented and will then determine which of the enumerated remedy options in s. 145.2.1(4) of the *EPA* should be applied based on the public interest, taking into account the purpose and provisions of the *EPA* and the applicable regulations, principles and policies. This will be discussed in the final section of this Decision.

[125] Regarding the finding made by the Tribunal that the Project will cause increased adult Blanding's turtle collision mortality on upgraded municipal roads, the Tribunal noted that not all the details had yet been determined regarding the upgrading of

municipal roads, but that the work was expected to focus on simply widening and/or the addition of gravel. At paras. 261 and 264 of the February 2016 Order, the Tribunal stated:

With respect to the nature and extent of upgrades to municipal roads required as part of the Project, the Approval Holder's Construction Plan Report prepared by Stantec reports that the transportation route to deliver the construction materials and Project components will be established through consultation with the municipality. Many of the municipal roads will not require modifications, but some will. Upgrading is expected to include widening and/or improvement of the granular base of the roads, but the precise designs were not provided to the Tribunal and appear to be as yet unknown. Mr. Taylor testified that he expected these improvements to be up to municipal standards. There was limited evidence presented on the specific locations of these upgrades, the specifications that the municipality will demand for them, or whether they will include design elements such as culverts intended to reduce road mortality to turtles. According to the Construction Plan Report, these matters will be addressed through negotiation of a road condition agreement between the Approval Holder and the municipality.

...

Mr. Taylor in his testimony agreed that if the municipal road upgrades are left in place, there will be an increase in the risk of Blanding's Turtle mortality. He went on to suggest that the upgraded municipal roads could be returned to their existing conditions once construction is complete, if required by the municipality. This may be so, but there is no evidence that the Approval Holder has committed to doing so, within what timeframe it might be done, or whether the municipality has agreed. There is no reference to this in the Decommissioning Report. Thus, Mr. Taylor's suggestion is speculative at this point.

[126] The NRSI Plan provides many of the missing details about the delivery route, the locations, timing, and specifications of the road upgrades and the proposed mitigation plan to remove the upgrades following construction of the Project. According to the NRSI Plan, routing of heavy trucks to turbine locations is "planned to avoid routes along existing roads through wetlands where Blanding's turtles are more likely to occur...". Three segments of secondary roads (of 1.90, 0.66 and 0.80 km respectively) and three segments of tertiary roads (of 1.46, 1.52 and 2.06 km respectively) will be upgraded and later returned to their original condition. Mr. Taylor described the proposals in his affidavit as follows:

The Secondary Roads will be temporarily widened by excavating 600 mm either side, and backfilled with compacted aggregate. The road surfaces will be topped up with Granular A, leveled and proof rolled to 90% SPD [Standard Proctor Density] to a travel width of 4.5 m for use by heavy equipment. Immediately after use, when no longer needed, the additional 600 m [sic] band along either side will be re-excavated and replaced with native soil and topsoil, seeded with the tenacious restoration mix and track-packed to imprint the seed.

The Tertiary Roads require a greater amount of widening of the travel portion, up to 750 mm either side and 600 mm shoulders for the travel portion of 4.5 m. Rather than excavate and try to replace it to the Municipal standard, the contractor will be required to trim the vegetation to the ground, cover the existing surfaces with geogrid over geotextile filter cloth, and build the roadway overtop with compacted Granular A and Granular B totaling 500 mm. The new roadway will be effectively floated on the old road for the duration of its use. Immediately following installation and commissioning of the turbine infrastructure, the aggregate will be taken up entirely down to the geogrid and geotextile cloth. The geotextiles will be rolled up for disposal, leaving the original road and native soils along the verges fully intact and unaltered. The verges will be reseeded and track packed where needed, but the native ground cover is expected to emerge in the spring from a combination of the remaining root zone and the native seed bank. Additional seeding will supplement the natural recovery of the vegetation but may be superfluous. Once complete, the contractor will regrade the original tertiary road to meet the municipal standard, using exactly the same type of machinery and methods used annually by the Municipality.

[127] According to the specifications in the NRSI Plan, the existing width of the secondary roads is 4.0 m, while the existing width of the tertiary roads is 3.0 m. Thus, these segments will require widening by 1.2 m and 2.7 m, respectively. The specifications for the upgrades to municipal road intersections were not provided in the NRSI Plan.

[128] Dr. Beaudry, APPEC's witness, was supportive of the road restoration measures in principle, and stated his opinion that among these measures, "the restoration of tertiary roads is particularly promising". Mr. Crowley, the Director's witness, stated that it was his opinion that "returning the municipal roads to their pre-construction state will effectively prevent an increase in the risk of Blanding's Turtle road mortality".

[129] The Tribunal agrees that returning the secondary and tertiary municipal roads to their existing condition would address its finding that permanently upgraded roads will

cause serious and irreversible harm to adult Blanding's turtles due to collision mortality over the life of the Project. The Tribunal finds that the video and topographic surveys of existing road conditions to be undertaken by the Approval Holder will provide it with means to ensure that those existing conditions are restored.

[130] Evidence before the Tribunal refers to the need for the Approval Holder to enter into a road use agreement with the County. The REA requires that the Approval Holder make reasonable efforts to enter into a road use agreement with the County, but makes no mention of the necessary terms. The NRSI Plan refers to a Road Use Agreement that was passed by the County on April 26, 2016. However, that Road Use Agreement was not provided to the Tribunal and no witness from the County gave evidence. No evidence was provided to the Tribunal specifying what was agreed to with the County, leaving uncertainty regarding whether the County has agreed to the Approval Holder's proposed construction, removal and restoration measures.

[131] In addition, the NRSI Plan raises several new concerns about the potential environmental impacts of the construction, removal and restoration activities. The proposal will require more significant and different construction activities than was indicated at the main hearing on the merits phase in this proceeding. This is particularly true for the tertiary road segments, which will require widening by 2.7 m, excavation, installation of geogrid and 500 millimetres ("mm") of gravel, followed by removal activities and restoration of native vegetation. These segments and several of the intersections to be restored occur in areas of prime Blanding's turtle habitat, including some segments adjacent to wetlands. In its June 2016 Order, the Tribunal ruled that, in determining an appropriate remedy, it would consider the issues of the effectiveness of proposed remedial measures and the impacts and implications of those measures, including the potential for unanticipated and unstudied impacts. However, evidence was not presented to the Tribunal regarding the potential environmental impacts of the proposed measures, nor was there evidence presented that the MOECC and/or the MNRF have reviewed the potential environmental impacts of the NRSI Plan.

[132] Mr. Taylor did not provide evidence of other locations or projects where these measures have been used in practice, nor did he provide any studies evaluating the environmental impacts of using these measures. Mr. Taylor referred to a project in Bowmanville and provided a report on that project, Shawn R. Taylor and J. Wilson Little, *Westside Creek and Marsh Reconfiguration for St. Marys Cement Canada Inc., An Outdoor Classroom: Part I of III* (Canada Land Reclamation Association, 2002). In reviewing that report, the circumstances of that work do not appear to be comparable to the circumstances at issue here, as it addressed the relocation and reconfiguration of a creek and wetland, and the report contains no evaluation of the impacts of the measures adopted.

[133] Another study provided by Mr. Taylor, Erik Kiviat, et al., “Restoration of Wetland and Upland Habitat for the Blanding’s Turtle, *Emydoidea blandingii*”, 3:4 *Chelonian Conservation and Biology* (2000), 650-657, assessed whether Blanding’s turtles would use a constructed wetland. The authors stated, at p. 656, that they “encountered problems likely to occur in other habitat construction projects”, such as unanticipated subsurface conditions, invasive species of plants, erosion and settling of soil, and noted that “[m]ore extensive and detailed pre-design data on hydrology, soils and turtles would have improved the project”. The authors continued:

We cannot precisely predict the trajectory of development of constructed wetland ecosystems and their capability to support the hydrologic, thermal, dietary, and other requirements of Blanding’s turtles. Information on the long-term development of the constructed habitats and their use by turtles will help ecologists and managers who are constructing or manipulating habitats for this species elsewhere in its range. Much remains to be learned about how Blanding’s turtles will respond to intentional restoration of habitats.

We therefore recommend that: (1) restoration be conducted to provide additional habitat rather than to mitigate intentional destruction of habitat; (2) habitat construction projects be located within or adjoining existing Blanding’s turtle habitat complexes; and (3) habitat construction use areas with soils and hydrology locally known to be suitable for Blanding’s turtle habitats. Different constructed habitat types appear differentially acceptable to Blanding’s turtles.

[134] Beyond his support in principle, Dr. Beaudry raised concerns regarding the experimental nature of the proposed measures and questioned whether it was appropriate to first try them out at the Project site. He stated:

I would strongly support evaluation of those methods, as well as their implementation, but once effectiveness has been demonstrated and the technical studies have been fine-tuned for real-world applications. I would want to see an evaluation of these methods done first on a different species (for example using painted turtles as a surrogate animal), then on a more secure population of Blanding's turtle.

As a result I cannot support the remedies that I have reviewed for this project.

[135] Ms. Gunson stated that the unknown impacts of the municipal road restoration work could be significant. She stated that the proposed mitigation measures are likely to cause flooding and affect other species of animals and native vegetation.

[136] The Tribunal agrees with Dr. Beaudry's concerns regarding the implementation of the proposed secondary and tertiary municipal road and intersection upgrade and restoration measures in Blanding's turtle habitat in the absence of evidence that the effectiveness of these measures has been demonstrated elsewhere. The Tribunal finds that the activities proposed for the secondary and tertiary roads are novel and their effectiveness and impacts are scientifically unproven. The Tribunal further finds that, given the nature, extent and locations of the activities, the impacts that would result from the Approval Holder's proposed measures for construction and removal of municipal roads and intersections and restoration of the surrounding environment differ significantly from those contemplated in the original REA as understood by the Tribunal in the main hearing. Although the avoidance and mitigation measures required under Condition L1 of the REA for the municipal road upgrades will apply to the road restoration work, many information gaps regarding impacts remain.

[137] The Tribunal finds that the unstudied impacts from the proposed measures would include those on the habitat and life cycle of Blanding's turtle, but also potential impacts on the local ecosystems in general. The impacts of the proposed mitigation measures were not addressed in the main hearing on the merits in this proceeding. Without evidence respecting the impacts and implications of the Approval Holder's proposed remedy with respect to construction and removal municipal road segments and restoration of the surrounding environment, it is not possible to determine whether or not these activities are likely to cause harm to plant life, animal life or the natural environment.

[138] The other findings of harm to Blanding's turtles in the February 2016 Order related to the increase in nest predation due to upgrades to the municipal roads and construction of access roads, crane pads and turbine bases. In that order, the Tribunal noted that Mr. Taylor had proposed certain mitigation measures that would inhibit nesting in these areas, but that these were not included in the REA. In para. 268, the Tribunal stated:

Mr. Taylor identified a number of measures in his witness statement that would inhibit turtles from nesting "and would completely avoid this impact." These post-construction measures include "incorporating a polymer binding agent ... into the aggregate, compacting and proof rolling the surface to a hard, smooth, well consolidated surface." However, these actions are not included as an avoidance measure in the REA and no further evidence was provided to the Tribunal setting out the practicalities, effectiveness or repercussions of undertaking such measures.

[139] For the upgraded municipal road segments, the NRSI Plan as discussed above applies. For the access roads and other permanent infrastructure, Tables 2.1 to 2.5 of the NRSI Plan put forward several measures to address the findings of harm relating to nest predation made by the Tribunal in its February 2016 Order. These include compaction of gravel surfaces, the use of minimal shoulders, the planting of vegetation, and incorporation of a geotextile grid built into the access road base to inhibit Blanding's turtles from nesting on or near these surfaces. The proposed measures include compaction of gravel surfaces on the access roads and monitoring to ensure that

compaction levels continue over time. Unlike the measures proposed for the upgraded municipal road segments, the size and profile of the access roads will be similar to what was contemplated in the original construction documents and the access roads will not be removed. The NRSI Plan also requires extensive vegetation monitoring and nest searches and monitoring. Nests that are found will be immediately protected from predators with cages and then, as soon as possible afterwards, eggs will be sent for incubation, hatching and raising to the juvenile stage of development at a wildlife rehabilitation facility. The costs of egg incubation, hatching and raising to the juvenile stage will be paid for by the Approval Holder. Verges will be re-seeded to create shade and the areas in question will be monitored regularly.

[140] Mr. Taylor stated that the Approval Holder's proposed measures will prevent Blanding's turtles from nesting on both the access roads and the municipal roads. Mr. Crowley agreed, stating that if the proposed measures are applied, there is a very low likelihood that Blanding's turtles will nest in the areas in question. Dr. Beaudry also agreed, stating that the proposed measures will deter Blanding's turtles from nesting on the roads. However, Dr. Beaudry questioned whether the head start programme would be as effective as Mr. Taylor suggested. Ms. Gunson raised no concerns about the proposed measures to address nest predation.

[141] Based on the evidence before it, the Tribunal finds that the Approval Holder's proposed avoidance and mitigation measures address the concerns raised in the Tribunal's findings in its February 2016 Order regarding nest predation for Blanding's turtle along new access roads and other Project infrastructure, and are not likely to create the risk of new types of harm that were not previously evaluated. The construction methods are not significantly different in kind or in extent from those that were addressed in the original construction design documents. Several studies provided by Mr. Taylor indicate that nest cages are effective in protecting nests from predators, even if not from flooding or temperature extremes. Evidence provided by Mr. Taylor, including Kurt A. Buhlmann, et al., "Reintroduction and Head-starting: Tools for Blanding's Turtle (*Emydoidea blandingii*) Conservation", 10 *Herpetological Conservation*

*and Biology* (2015), 436-454, is evidence that incubation through a head start programme has the potential to have a positive impact on the local population.

### *Summary of Findings on Blanding's Turtle Mitigation*

[142] The Tribunal finds that the Approval Holder's proposed avoidance and mitigation measures address the Tribunal's findings in its February 2016 Order regarding Blanding's turtle mortalities caused by the Project due to nest predation. However, the Tribunal finds that the Approval Holder's proposed measures to address adult collision mortality through the upgrading and subsequent removal of secondary and tertiary municipal roads and intersections located in Blanding's turtle habitat and restoration of the surrounding environment have not been studied to determine their impacts at the Project site on Blanding's turtles or other plant life, animal life or the natural environment in the specific locations proposed, so that the Tribunal is unable to determine whether or not these activities are likely to cause harm to plant life, animal life or the natural environment. Also, there is no evidence that many of these proposed mitigation measures have been used elsewhere, and their impacts on Blanding's turtles, their habitat and the local ecosystems are unknown.

## **Issue 5: The Appropriate Remedy**

### *Submissions*

[143] APPEC submits that the Tribunal should consider the purpose of the *EPA* and the policies in the MOECC's SEV in determining an appropriate remedy. APPEC submits that all of the Approval Holder's proposed remedies conflict with the statutory purpose and are inconsistent with policies in the MOECC's SEV. Specifically, APPEC asserts that, because the proposed remedies all amount to completely unstudied experiments, to approve them would not be consistent with a science-based precautionary approach. In addition, APPEC submits that the proposed remedies have the potential for unanticipated and cumulative effects on the local ecosystem and thus

are not consistent with an ecosystem approach. Finally, APPEC submits that, taking into account economic and social considerations, there is no need for the Project to meet the province's energy requirements.

[144] As the basis for this last argument, APPEC filed an affidavit from Tom Adams, whom the Tribunal qualified as an energy consultant. He identified documents relating to the Ontario Government's September 2016 decision to suspend the second Large Renewable Procurement ("LRP II"), including a report by the Independent Electricity System Operator ("IESO"). Mr. Adams stated his opinion that, even though the Project is not part of that procurement process (having previously been approved), nevertheless the Project is not needed to meet Ontario's present or future energy needs.

[145] The Approval Holder submits that the Tribunal should base its determination under s. 145.2.1(4) of the *EPA* on the evidence presented and not on policy considerations and that to do so would be an error of law. The Approval Holder argues that, in any event, there are no policy issues that have been raised that justify halting the Project.

[146] The Approval Holder submits that Mr. Adams' views should be given no weight because he does not speak for the Ontario Government, has no expertise in assessing government procurement policies, and acknowledges that the LRP II is not relevant to the Project.

[147] The Director submits that the precautionary principle does not require absolute proof that no harm will occur and that in this case the proposed mitigation measures are consistent with the precautionary principle and the ecosystem approach, and with the purposes of the *EPA* and the *EBR*. The Director asserts that there is credible evidence that these measures will prevent harm to LBB and Blanding's turtles.

[148] The Director submits that Mr. Adams' evidence is not relevant to the Project. He further submits that the LRP II addresses only future procurement and quotes from the IESO report, which states, "provided that the planned resources come into service and existing resources continue to operate", the LRP II is not needed to meet the demand forecast. The Director submits that the Project is part of "planned resources". He also argues that, within the larger regulatory scheme for renewable energy, it is not the role of the Director, exercising authority under s. 47.5 of the *EPA*, or the Tribunal in determining an appropriate remedy under s. 145.2.1(4) of the *EPA*, to assess whether energy is needed or to second guess procurement policy or decisions made by the Minister of Energy or the IESO. Instead, the Director asserts that it is his role to determine whether the proposed project is in the public interest in the sense that it achieves the objectives of the *EPA*, the regulations and applicable guidance.

#### *Analysis and Findings*

[149] The Tribunal has found in previous appeals under this section of the *EPA* that, in exercising its discretion under s. 145.2.1(4), the Tribunal must consider the purpose of the legislation, the regulations and relevant policies in order to determine whether a proposed remedy is in the public interest. In *SLWP*, at para. 14, the Tribunal quoted from *PECFN*, the first case in which it was called on to make a ruling under s. 145.2.1(4), and stated:

... the Tribunal's powers ... are informed by the purpose of the *EPA* as a whole at s. 3(1) and the purpose of Part V.0.1 of the Act relating specifically to renewable energy, at s. 47.2. As noted at para. 48 of *PECFN*, the "policy goals of promoting and streamlining renewable energy projects lose their primacy and become one of many factors to consider within the broader legislative framework and the public interest in energy generation that mitigates harm to the environment".

[150] The general purpose of the *EPA* is the protection and conservation of the "natural environment", which means air, land and water, or any combination or part thereof. Under s. 47.2 of the *EPA*, the purpose applicable to Part V.0.1 of the *EPA*, with respect

to renewable energy, is the protection and conservation of the “environment” as defined in the *Environmental Assessment Act*, which is:

- (a) air, land or water,
- (b) plant and animal life, including human life,
- (c) the social, economic and cultural conditions that influence the life of humans or a community,
- (d) any building, structure, machine or other device or thing made by humans,
- (e) any solid, liquid, gas, odour, heat, sound, vibration or radiation resulting directly or indirectly from human activities, or
- (f) any part or combination of the foregoing and the interrelationships between any two or more of them,

in or of Ontario...

[151] In its June 2016 Order, the Tribunal invited the parties to make submissions on what principles and policies they considered to be relevant to the determination of an appropriate remedy. At para. 52, the Tribunal stated:

Looked at more broadly, as stated by the Tribunal in *Johnson*, citing the Supreme Court of Canada in *Imperial Oil*, the Tribunal must fulfil its “duty to choose the best course of action, from the standpoint of the public interest, in order to achieve the objectives of the environmental protection legislation.” To the extent that generally accepted principles of environmental decision-making, such as the precautionary principle, are relevant to the Tribunal’s fulfilment of its duty to consider the public interest in the context of the purpose of the *EPA*, the Tribunal will consider them. The parties may identify in their submissions how specific principles and policies they consider relevant should apply to the disposition of this proceeding.

[152] APPEC submits that if the precautionary and ecosystem approaches are applied, the REA should be revoked.

[153] The Approval Holder argues that the REA should be approved. It submits that the Tribunal’s decision should be based on the evidence and that no applicable policies justify halting the Project.

[154] The Director submits that the precautionary principle and ecosystem approach are satisfied by the proposed mitigation measures.

[155] The Tribunal is tasked with determining what remedy is appropriate in the public interest. In its June 2016 Order, the Tribunal stated, at paras. 40-44:

APPEC and the Director both submit that when exercising discretion and considering the options under s. 145.2.1 (4), the Tribunal must take into account the public interest and the statutory context. The Tribunal agrees. With respect to the exercise of its powers under the *EPA* and other environmental legislation generally, the Tribunal stated, in *Crest Centre (Meadowcrest) v. Ontario* (2007), 33 C.E.L.R. (3d) 132, which was cited by APPEC, as follows, at para. 31:

In the context of the *EPA*, the Tribunal has already found that statutory decision-makers like the Tribunal and Directors have a duty to carry out their discretionary powers in a way that furthers the public interest environmental protection purpose of the applicable legislation. The Tribunal stated, in *Johnson v. Ontario (Ministry of Environment)*, [2006] O.E.R.T.D. No. 5 (Ont. Environmental Review Trib.) [*Johnson*] at para. 65:

The Tribunal agrees that statutory decision-makers, including the Tribunal itself, have an authority and a “duty to choose the best course of action, from the standpoint of the public interest, in order to achieve the objectives of the environmental protection legislation.” (*Imperial Oil Ltd. v. Quebec (Minister of the Environment)*, [2006] 2 S.C.R. 624 at para. 38).

In exercising its discretion, the Tribunal may only consider and base its decision on relevant factors and is guided by the provisions of the *EPA* as to what those factors are in the context of a renewable energy approval appeal. As stated in *Blake*, at p. 100:

Discretionary decisions should be based primarily upon consideration of factors pertinent to the policy and objects of the statute. A public authority in the exercise of its statutory powers may not act on extraneous, irrelevant and collateral considerations. Nor may the public authority ignore relevant considerations...

The Tribunal finds that the public interest, as shaped by the purpose and provisions of the *EPA*, is the primary factor to be considered when exercising its discretion under s. 145.2.1 (4). This is similar to the Director’s powers under s. 47.5 (3). In addressing this issue in *PECFN*,

at para. 54 the Tribunal found that it may consider the *EPA*'s general and specific purposes as well as provincial renewable energy objectives when considering the public interest in the context of s. 145.2.1 (4); however, it also noted that the objective of promoting renewable energy approvals "should not be presumed to take priority over other all other factors".

Section 145.2.1 sets out the powers of the Tribunal on renewable energy approval appeals. There is no dispute that the special regime created by Part V.0.1 was adopted in order to establish a streamlined process to facilitate the approval of renewable energy projects. In *Middlesex-Lambton Wind Action Group Inc. v. Ontario (MOECC)*, [2012] O.E.R.T.D. No. 35, the Tribunal interpreted the *EPA* provisions governing its role and held that a hearing under these provisions is neither a new hearing nor a true appeal. At para. 100, the Tribunal stated (emphasis added):

The nature of the REA hearing fits somewhere on a spectrum between these two types of proceedings, and has elements of both. The REA hearing is a novel regime *designed to further the legislative scheme promoting renewable energy while respecting the government's obligations to protect human health and the environment.*

This type of proceeding is different from other Tribunal hearings under the *EPA* in terms of the limited scope of the inquiry, the onus placed on appellants and the exacting standard of having to prove that specified harm will occur. Nevertheless, the statute clearly recognizes that, in the pursuit of a general policy in favour of renewable energy, individual renewable energy projects may cause harm to human health or the environment. The appeal process was designed to promote renewable energy *and* to protect human health and the environment. The Tribunal's role in determining an appropriate remedy is to assess, in each case, the extent to which both objectives can be met.

[156] In *PECFN*, the Tribunal stated at paras. 136 and 138:

The Tribunal has found that in the exercise of its discretionary remedial powers under s. 145.2.1(4), it may consider, among other things, the general purpose of the *EPA* and renewable energy approval purposes of the *EPA* in ss. 3(1) and 47.2(1), respectively, and the public interest under s. 47.5. The Tribunal has found that the policy of promoting renewable energy is a factor in assessing the public interest but the policy does not automatically override the public interest in protecting against other environmental harm, such as harm to species at risk and their habitat. The Court of Appeal in the *PECFN* decision recognizes the difficult, but necessary, task the Tribunal has of balancing "different and potentially opposing values".

...

The Tribunal finds that to proceed with the Project, when it will cause serious and irreversible harm to animal life, a species at risk and its

habitat, is not consistent with the general and renewable energy approval purposes of the *EPA* in s. 3(1), protection and conservation of the natural environment, and s. 47.2(1), protection and conservation of the environment, nor does it serve the public interest under s. 47.5. In this particular case, preventing such harm outweighs the policy of promoting renewable energy through this nine wind turbine project in this location.

[157] In the circumstances of this case, the Tribunal found in its February 2016 Order that the Project will cause serious and irreversible harm to LBB, an endangered species, and Blanding's turtle, a threatened species. In determining an appropriate remedy, the Tribunal finds that application of the precautionary principle is appropriate in order to fulfill the *EPA*'s purpose of "protection and conservation" and determine which remedy is in the public interest. The precautionary principle is a principle of law that has been applied by the Supreme Court of Canada in *114957 Canada Ltée (Spraytech, Société d'arrosage) v. Hudson (Town)*, [2001] 2 S.C.R. 241 ("*Spraytech*"). The Supreme Court stated at para. 31:

In order to achieve sustainable development, policies must be based on the precautionary principle. Environmental measures must anticipate, prevent and attack the causes of environmental degradation. Where there are threats of serious or irreversible damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation.

The principle is also reiterated in the MOECC's SEV which states that the MOECC "uses a precautionary, science-based approach in its decision-making to protect human health and the environment".

[158] In addition, the Tribunal finds that the definitions of both "environment" and "natural environment" imply that an ecosystem approach, whereby the processes, functions and interactions among components of the environment are considered, is a relevant factor in determining what remedy is in the public interest in the circumstances of this proceeding.

[159] In the case of LBB, the Revised Stantec Plan applies the precautionary principle by instituting operational curtailment from the outset. This approach is supplemented by enhanced surveys and an enhanced response protocol to better detect and more quickly respond to any fatalities that occur than was the case under the REA and the original OMP. Overall, the curtailment parameters are based on a scientific foundation and tailored to the most active season and period for LBB. The Tribunal has found that the only parameter that was not justified on the evidence was the ending of curtailment at midnight during the season when LBB are most active. Instead, the evidence provided to the Tribunal indicates, on a balance of probabilities, that ending curtailment at sunrise during the most active months for LBB is necessary as it will likely significantly reduce harm caused by the Project to this endangered species. The Tribunal finds that, because a modified Revised Stantec Plan, which includes a condition to reflect the Tribunal's finding with respect to the timing of curtailment, will significantly reduce LBB mortality, it is in the public interest to alter the decision of the Director by amending the REA to add the Approval Holder's proposed Condition J7.1 as modified by the Tribunal in this regard.

[160] In the case of Blanding's turtle, the NRSI Plan is designed to directly address the Tribunal's findings with respect to adult collision mortality on upgraded municipal roads and nest predation across the Project site. The Tribunal has found that the proposed measures designed to reduce the likelihood of turtles nesting along new access roads and other Project infrastructure are likely to achieve that end and are not likely to create the risk of significant harms that were not previously evaluated. In addition, the evidence indicates that the measures to protect nests and facilitate incubation, should nests be found, are positive measures that are likely to ensure a greater level of protection to the local population. In the circumstances, these measures reflect application of the precautionary principle.

[161] While the evidence indicates that removing the municipal road upgrades would return the level of risk of adult collision mortality to approximately the existing level, the Tribunal finds, taking into account the purposes of the *EPA*, that the Approval Holder

has failed to satisfy the Tribunal that the mitigation measures it has proposed will not cause new and potentially significant impacts. As noted above, the Tribunal was not provided with evidence of the impacts and implications of the proposed remedy to construct and remove municipal road and intersection upgrades and restore the environment in Blanding's turtle habitat and therefore cannot make a finding as to whether or not those actions will cause harm to plant life, animal life or the natural environment. In addition, the Tribunal finds that implementing novel, unstudied and unproven construction, removal and restoration activities in Blanding's turtle habitat is not consistent with the precautionary principle or an ecosystem approach.

[162] APPEC proffered Mr. Adams' evidence as the basis for arguing that the Tribunal should consider whether the electricity generated by the Project is needed. APPEC's argument regarding how this information could be relevant to the Tribunal's decision-making authority under the *EPA* was not well-developed. In any event, Mr. Adams admitted that the Project is not part of a future renewable energy procurement, but has already been approved and is included by the IESO in its "planned resources", which IESO is relying on coming into service. As such, the Tribunal finds that Mr. Adams' evidence is neither relevant nor helpful to the decision it must make in this proceeding.

[163] In light of all of the circumstances, based on the evidence provided and taking into account the purposes of the *EPA* in support of environmental protection and renewable energy, the Tribunal finds that it is in the public interest to alter the Director's decision by amending the REA in part. The Tribunal finds that it is in the public interest to add the Approval Holder's proposed Condition L2 to the REA, but to alter that condition by removing Tables 3-1 to 3-3, in the NRSI Plan. The Tribunal further finds that it is in the public interest to remove from the REA the turbines proposed to be accessed by the proposed upgraded secondary and tertiary municipal road segments and by the intersections in Blanding's turtle habitat, specifically Turbines 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28 and 29.

[164] Although the parties did not address the issue of migratory birds in the remedy phase of the proceeding, the Tribunal reiterates its finding and recommendations from the February 2016 Order, at paras. 315-319, regarding the significant risk of serious harm to migrating birds posed by the Project.

[165] The Tribunal notes that, pursuant to its Order dated January 8, 2016, in Tribunal Case No. 15-071, the hearing of the issue of the amendment of Condition L1(3)(a) of the REA will be addressed in due course in that proceeding.

## **DECISION**

[166] Under s. 145.2.1(4)(c) of the *EPA*, the Tribunal alters the decision of the Director by amending Renewable Energy Approval No. 2344-9R6RWR as follows:

1. Adding the following conditions to the REA:
  - i. Condition J7.1. The Company shall implement the Mitigation Plan for Operation of the White Pines Energy Project, dated July 21, 2016 prepared by Stantec Consulting Ltd., including:
    1. Implement the monitoring and mitigation measures as outlined in Table 2 of the Mitigation Plan;
    2. Adjust cut-in speed to 5.5 m/s between sunset and sunrise from May 1 to September 30 at all turbines for the operating life of the Project; and
    3. In the event of a mortality of a bat species that is a species at risk, successively increase the operational mitigation as detailed in Table 2 of the Mitigation Plan.
  - ii. Condition L2. Further, the Company shall implement the additional avoidance and mitigation measures as outlined in the report “Additional Avoidance and Mitigation Measures to Minimize Potential Impacts to Blanding’s Turtle (*Emydoidea blandingii*)”, prepared by Natural Resources Solutions Inc., dated July 22, 2016,

including implementation of the mitigation measures described in Tables 2-1 to 2-5 and 4-1 of that report.

2. Removing from the REA the turbines proposed to be accessed by upgraded municipal secondary and tertiary road segments and intersections in Blanding's turtle habitat, as identified in Figure 2.2 of the report "Additional Avoidance and Mitigation Measures to Minimize Potential Impacts to Blanding's Turtle (*Emydoidea blandingii*)", prepared by Natural Resources Solutions Inc., dated July 22, 2016, specifically Turbines 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28 and 29.

*Renewable Energy Approval Altered*

*"Marcia Valiante"*

MARCIA VALIANTE  
MEMBER

*"Hugh S. Wilkins"*

HUGH S. WILKINS  
MEMBER

Appendix 1 – Attached

If there is an attachment referred to in this document,  
please visit [www.elto.gov.on.ca](http://www.elto.gov.on.ca) to view the attachment in PDF format.

**Environmental Review Tribunal**

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## Whether the Approval Holder's Reply Submissions are Proper

### *The Parties' Submissions*

APPEC requests that the Tribunal strike 25 paragraphs in the Approval Holder's Reply Submissions on Remedy, dated January 25, 2017, on the grounds that they do not constitute proper reply. The impugned material is found in paragraphs numbered 1 to 7, 9 to 10, 14 to 19, 22 to 25, 27, 51, 69, 70, 73 and 93 of the Approval Holder's submissions.

APPEC argues that the test for what is proper reply is found in the Tribunal's decision in *Guelph (City) v. Ontario (Ministry of the Environment)*, [2014] O.E.R.T.D. No. 14 ("*Guelph*"). APPEC submits that the Approval Holder's reply submissions simply repeat its initial submissions or attempt to bolster its position, contrary to the principles regarding reply found in *Guelph*. APPEC further submits that the Tribunal has applied these principles to legal submissions as well as to evidence, as illustrated by its ruling in *SR Opposition Corp. v. Ontario (MOECC)*, [2015] O.E.R.T.D. No. 61 ("*SR Opposition*").

The Approval Holder argues that its reply submissions are proper in that they either respond to submissions made by the Appellants or clarify and amplify its position where the Appellants have misconstrued its position. The Approval Holder further argues that there has been no prejudice to the Appellants.

### *Analysis and Findings*

In *Guelph*, at para. 12, the Tribunal stated that in assessing what is proper reply in the context of that proceeding, which was a written application for leave to appeal, it "must balance a number of factors, including fairness to all parties,

public participation, efficiency and assistance to the Tribunal.” The Tribunal continued, at para. 14, to summarize the principles regarding proper reply:

An applicant is expected to put its complete case forward in its leave application;

In reply, an applicant may not add new issues or evidence that it was aware of or could have reasonably anticipated and addressed in its application;

In reply, an applicant may respond directly to a new issue or new evidence contained in the respondent’s submissions; and

In reply, an applicant may not simply repeat earlier submissions or attempt to bolster its application, but may clarify or amplify an earlier submission, especially where a response misconstrues its position or where an initially less significant issue takes on greater importance because of the response.

In *SR Opposition*, the Tribunal balanced the relevant factors and accepted that it would be unfair to the approval holder and the Director to consider any of the appellant’s reply submissions that were either new arguments or repetitions of previous arguments and did not respond to the other parties’ submissions.

In this case, the Approval Holder’s reply submissions start with an “Overview”, followed by the sentence: “The relevant facts have already been stated in the Approval Holder’s closing submissions, and will be reviewed below as necessary.” The next section addresses the “Legal Framework”, but states that the legal framework “will not be revisited here except to clarify the standard of proof...” as raised by APPEC in its submissions. All of these paragraphs are challenged as improper. The next sections are organized to respond directly to the evidence of, first, Mr. Hirsch, and second, APPEC.

There are some individual sentences and parts of a few paragraphs in its reply submissions that repeat some of the Approval Holder’s initial submissions; however, these are primarily included in the overview and are used to set up the response to the Appellants’ submissions. Overall, the Approval Holder’s reply submissions respond to the submissions of Mr. Hirsch and APPEC. They largely

clarify the Approval Holder's position directly in response to submissions made by the Appellants. They do not raise new issues or arguments.

The circumstances of this case are that the parties were directed to file their written submissions on remedy, led by the Approval Holder and the Director, followed by the Appellants in response, and then reply. Following written submissions, the parties had an opportunity to present their submissions at an oral hearing before the Tribunal and members of the local community. Thus, unlike in *Guelph* and *SR Opposition*, prior to the oral hearing, APPEC had a full understanding of all of the positions being advanced by the Approval Holder and had an opportunity at the oral hearing to respond in order to clarify its own positions. At the oral hearing, counsel for APPEC also requested, and was granted, an opportunity for sur-reply. In light of these circumstances, APPEC has not demonstrated any unfairness or prejudice.

The Tribunal dismisses APPEC's request to strike paragraphs from the Approval Holder's Reply Submissions on Remedy.