



Heritage Wind Farm Development Inc.

**Decision on Preliminary Question
Review and Variance of Alberta Utilities Commission
Decision 2011-239, Heritage Wind Farm Development
Heritage Wind Farm Power Plant**

January 24, 2012

The Alberta Utilities Commission

Decision 2012-029: Heritage Wind Farm Development Inc.
Preliminary Question, Review and Variance of Decision 2011-239
Application No. 1607559
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1 Introduction

1. Benign Energy Canada Inc. (Benign) filed Application No. 1480111 with the Alberta Energy and Utilities Board, predecessor of the Alberta Utilities Commission (AUC or Commission), in September 2006 seeking approval to construct and operate a wind farm in the Pincher Creek area. Benign took no steps to pursue the application and, in January 2008, informed the Commission that it had transferred its interest in the proposed wind farm to Heritage Wind Farm Development Inc. (Heritage).
2. On September 25, 2009, Heritage reactivated the application by filing an update to reflect conditions of the municipal approval. Heritage also conducted a new participant involvement program and filed a noise impact assessment (NIA) and other information necessary to complete the application. The Commission requested further information on March 10, June 29 and July 15, 2010.
3. Marilyn and Harry Welsch, TransAlta Corporation and FortisAlberta Inc. filed objections with the Commission in regard to the project. All objections were subsequently withdrawn.
4. On June 2, 2011, the Commission issued Decision 2011-239 approving the Heritage application to construct and operate the Heritage Wind Farm Power Plant (wind farm), pursuant to section 11 of the *Hydro and Electric Energy Act*.
5. On June 17, 2011, Heritage sent a letter to the Commission stating that it was never the intention of Heritage to shut down 57 wind turbines during the nighttime period but rather to operate these turbines in a manner “to ensure that the cut in speed for those turbines occurred at the moment the noise created by the wind speed was equal to or greater than the noise level from the turbines”. Heritage requested the Commission to revise paragraph 35 of Decision 2011-239 as follows:

It is respectfully suggested that the sentence in paragraph 35 of the report which provides:

The measures proposed by Heritage consist of the shutting down of 57 wind turbines, the programming of five wind turbines to operate in mode 1 and the programming of 33 wind turbines to operate in mode 2 during the nighttime hours.

be deleted and replaced with the following:

The measures proposed by Heritage consist of the curtailment of 57 wind turbines during the nighttime hours consistent with the

noise mitigation measures included in the application, the programming of five wind turbines to operate in mode 1 during the nighttime hours and the programming of 33 wind turbines to operate in mode 2 during the nighttime hours.

6. On July 26, 2011, the Commission issued a letter to Heritage indicating that Heritage's request to amend paragraph 35 was of a substantive nature. Accordingly, Heritage could make an application to the Commission for a review and variance of Decision 2011-239 pursuant to Rule 016: Review and Variance of Commission Decisions (Rule 016).

7. On July 29, 2011, Heritage filed with the Commission a request for review and variance of Decision 2011-239 from Heritage. The grounds for review are as follows:

- a. The wording in paragraph 35 of Decision 2011-239 is merely a clerical error, or alternatively, creates ambiguity which requires clarification.
- b. In the alternative, Heritage submits that the Power Curve Data Brochure and the V90-3.0 MW noise modes evidence the various scenarios available to Heritage to manage and mitigate noise levels during the nighttime period. This Brochure was not available at the time of the preparation of the NIA, and as stated by Garrad Hassan, it has not modeled outside the range specified in AUC Rule 012. As indicated by Heritage, it intends to limit noise levels during the nighttime period by a combination of programming lower sound power output periods and programming the turbines to cut-in at higher wind speeds.

2 Review and variance process

8. The Commission issued a process letter on August 2, 2011 seeking comments on the preliminary question as to whether the Commission should grant a review on the review and variance application filed by Heritage. Registered parties to the initial proceeding were asked to file comments by August 16, 2011. Heritage was afforded an opportunity to reply to any comments filed by any other party and was asked to do so by August 30, 2011.

9. On August 16, 2011, Alberta Wind Energy Corporation on behalf of Windy Point Wind Park Ltd. (Windy Point) and Geilectric Inc. (Geilectric) filed comments in response to the Commission's notification of the Heritage review and variance request. On August 30, 2011, Heritage replied to the comments from Windy Point and Geilectric.

10. The Commission issued information requests to Heritage on November 3, 2011 and Heritage responded to these requests on November 30, 2011. Therefore, the record of this proceeding closed on November 30, 2011.

11. In reaching its determinations set out within this decision, the Commission has considered the submissions of the parties, the record of the proceedings resulting in Decision 2011-239, as well as Decision 2011-239. Accordingly, references in this decision to specific parts of the record are intended to assist the reader in understanding the Commission's reasoning

relating to a particular matter and should not be taken as an indication that the Commission did not consider all relevant portions of the record with respect to that matter.

3 Review and variance application

12. In support of its review and variance application, Heritage submitted that it was never the stated intention of Heritage to shut down 57 turbines during the nighttime hours, but rather to operate those turbines in a manner to ensure that the nighttime PSL was not exceeded. Heritage referred to Table 8 of the NIA which provides:

... the turbines will be programmed such that it is not operational during the nighttime period when wind speeds are such that this would cause the PSL to be exceeded.

13. Heritage argued that this indicates that the turbines would continue to operate during the nighttime period on an alternative mode. Heritage made reference to its response to Information Request (IR) AUC-Heritage 28 as the potential source of confusion as to the intended operation of the wind turbines during the nighttime period. In the IR, Heritage responded as follows:

It is not currently purported to operate any of the Heritage Turbines with a cut-in wind speed higher than the standard cut-in speed of 4m/s...

14. Heritage contended that its intent was to formulate a baseline within which all modeling results could be assessed and it was never expected that turbines would be non-operational during the nighttime hours. This intent was qualified in Section 2.6 of the NIA where it states:

...intends to limit noise levels at receptors during the nighttime period by a combination of programming lower sound power output modes and programming the turbines to cut in at higher wind speeds.

15. Heritage appears to be referring to the concept of wind masking which takes place when the background noise at the location of the receptor from the wind is equal to or greater than the noise from wind turbines. At such times, the background noise dominates the total noise profile at the receptor and therefore, masks the noise from the wind turbines to the point where the noise from the turbines is indiscernible within the total noise profile. However, under Rule 012, an applicant must file an NIA showing that its proposed wind farm operation modeled at wind speeds from cut in speed, at the hub height at 4m/s, to maximum noise output, at wind speeds of 9m/s, on a cumulative basis does not exceed the PSL specified in the rule. Wind masking is not a consideration under Rule 012 in determining whether a proposed facility will meet the PSL.

16. Heritage submitted that Exhibits 11.03 and 11.04¹ in the original proceeding which resulted in Decision 2011-239 provide additional support from the turbine manufacturer that turbines can be operated in various modes and programmed to operate at different wind speeds to ensure operational flexibility to address noise concerns.

¹ These exhibits were submitted in Proceeding 276 on July 16, 2010 in response to information requests from the Commission. Exhibit 11.03 addressed bat mitigation and Exhibit 11.04 addressed wind management.

17. Heritage further argued that a new Power Curve Data Brochure became available only after it prepared its NIA. The information contained in the brochure provides details and specifications about the V90-3.0 MW wind turbine model, the model to be used for the Heritage Wind Farm. The information contains various graphs and data on the capabilities of the model, including information on power reduction at various modes of operation. Heritage added that the brochure demonstrates that various scenarios are available to Heritage to manage noise levels during the nighttime period. Heritage added that its intention was to limit noise levels during the nighttime period by programming lower sound power output periods and programming the turbines to cut-in at higher wind speeds. It argued that the brochure contained new facts or circumstances that could lead the Commission to materially vary its decision.

18. In conclusion, Heritage submitted that the AUC misstated the intention of Heritage with respect to the operation of the wind farm and requested that the AUC review and vary its decision and amend paragraph 35 accordingly.

3.1 Responses

19. Windy Point expressed its view that Decision 2011-239 should not be reviewed by the Commission and remain as it currently stands for the following reasons:

- a. The current decision is sufficient. Windy Point referenced paragraph 39 of Decision 2011-239 which provides direction from the Commission on how Heritage may increase power production to meet the sound levels at receptors which may be affected. The Commission stated that if post-construction sound measurements show that the sound levels at receptors are significantly below the [permissible sound level] PSL, the Commission directs that before any turbine reprogramming to increase output is taken, Heritage can file an application for AUC approval.
- b. Decision 2011-239 is very recent and the applicant would have had ample time to adjust their turbine locations and operations. Windy Point indicated that it is improper to request a review of such a current decision.
- c. Windy Point submitted an application to the AUC on July 22, 2011 for approval to construct and operate the Windy Point Wind Plant, a 63 MW wind power plant. The design, layout and noise calculations were based on Decision 2011-239. Windy Point argued that the engineering involved in preparing an AUC application is time consuming and costly and if Heritage is granted the request it may negatively impact Windy Point's application by causing a scheduling delay and severe financial penalties if Windy Point is required to redesign its turbines and infrastructure.

20. In its response, Geilectric stated that it filed an application with the AUC in June 2010 for approval to construct and operate the Welsch Wind Farm Project (Welsch), a 69 MW wind project and submitted its final NIA for the project in March 2011. The NIA considered the turbines of all nearby projects for which AUC approval was issued and which were applied for including Heritage. Geilectric stated that the Heritage NIA indicated that a number of the Heritage turbines would run in reduced mode during nighttime hours and that a certain number of turbines would be completely shut down, as demonstrated in figure 2 of the Heritage NIA.

This figure illustrated the absence of noise emissions for 57 turbines during nighttime hours. In addition, the Geiletric's NIA was reviewed by Heritage representatives who said they had no concerns about the assumptions in Geiletric's NIA that some of the Heritage turbines were to be shut down during nighttime hours. Therefore, the NIA submitted by Geiletric was based on the scenario that a number of Heritage's turbines were to be shut down during the nighttime hours.

21. Geiletric submitted that Heritage is trying to substantially change and modify its operation strategy for the Heritage wind farm through its review request. Geiletric argued that there was no ambiguity on the intent of shutting down the turbines during the nighttime period and that a change in the operation strategy will have negative and adverse impact on other proposed wind projects in the vicinity, including the Welsch project. Geiletric further argued that if the review is granted, this could raise a doubt as to the accuracy and admissibility of subsequently filed applications and the proper public consultation required.

22. Geiletric requested that if a review is granted, Heritage should provide the Commission with a revised NIA that would model all surrounding projects that are proposed, approved or existing in the vicinity of Heritage's wind farm.

3.2 Heritage reply

23. Heritage submitted that the alleged error of the Commission in its interpretation of the Heritage NIA raises a serious issue that creates substantial doubt on the correctness of the Commission's decision.

24. In response to Geiletric's argument that Heritage did not raise any concern regarding the assumptions in Geiletric's NIA, Heritage stated that Rule 016 is clear that any party to a decision has 60 days to seek a review and variance. Heritage argued that if Geiletric failed to properly consider the operating parameters set out in Heritage's NIA, Heritage should not be responsible for those miscalculations. Heritage submitted that it is availing itself of the regulatory remedies available to it and the decision is not final until those remedies are exhausted. Those remedies cannot be dispensed with because Geiletric has based its NIA on erroneous facts and assumptions.

25. In response to Geiletric's submission that Heritage is trying to substantially change or modify its proposed operation strategy, Heritage stated that it is trying to establish the stated intent of the operating parameters which the Commission and interveners have failed to recognize. It was never the stated intention of Heritage to shut down the turbines but rather to operate the turbines in a manner to ensure that the nighttime permissible sound level was not exceeded. Heritage submitted that it had also expressed the intent to implement additional control mechanisms to moderate turbine sound emissions further should the permissible sound level be exceeded at any receptor location. In addition, Heritage stated that the review and variance can also address the new information that it has received in regard to managing operating modes and cut in speeds based on wind conditions in order to achieve the permissible sound level under periods of higher residual noise.

26. In response to Geiletric's statement that Heritage's operation strategy will have negative and adverse impacts on wind projects in the vicinity, Heritage argued that the application for review and variance applies only to the nighttime operational period and nearby developments should already be designed with full capacity daytime operation. Therefore, modifications to the

nighttime parameters should not unduly impact the current development design of nearby wind farms. Heritage also contended that the application for review and variance is to address conditions applicable to wind farms which are not necessarily covered sufficiently in the current version of Rule 012.

27. In response to Windy Point's statement that Decision 2011-239 is sufficient, Heritage stated that Windy Point misunderstood the purpose of paragraph 29 of Decision 2011-239. Heritage pointed to its response to IR 26² indicating that, in Table 8, Heritage had outlined that specific turbines will not be operational during the nighttime period when wind speed is such that this would cause the permissible sound level at receptors to be exceeded. It would operate the turbines outlined in Table 8 during the nighttime period by a combination of programming lower sound power output modes and reprogramming turbines to cut in at higher wind speeds.

28. In response to Windy Point's argument that Decision 2011-239 is recent, Heritage stated that it was availing itself of regulatory remedies available to it within the parameters of Rule 016. In response to Windy Point's assertion that it relied on the Heritage NIA, Heritage pointed out that Heritage was well within its rights to seek a review and that additional assessment would not include adjustments to turbine locations or operations under the conditions addressed by the NIA and therefore, the fears of Windy Point and the potential effects are vastly overstated.

29. In addition, Heritage submitted stated that Rule 012 does not have the flexibility to address the unique operating parameters of a wind power project. This appears to be referring to the concept of wind masking explained above. Heritage stated that its NIA addressed the unique operating parameters in sufficient detail to allow it to operate and take into account the challenges associated in compliance with Rule 012. Heritage also argued that Heritage's NIA assumed a ground attenuation factor of 0.8 where other interveners assumed an attenuation factor of 1.0. In its NIA, Heritage set out the impact of utilizing a 1.0 attenuation factor which demonstrated that the wind farm would meet the nighttime requirements at all but one receptor which was exceeded by 0.1 dBA. Heritage indicated that it anticipated that by utilizing a ground attenuation factor of 0.8, the nighttime curtailment procedures proposed in its NIA would be understood by the AUC.

30. Overall, Heritage concluded that it raised a substantial doubt as to the correctness of paragraph 35 of Decision 2011-239 and that there are new facts available, not previously addressed in evidence, which may lead the Commission to materially vary its decision.

4 Test for review and variance - preliminary question

31. The Commission may review its decisions pursuant to Section 10 of the *Alberta Utilities Commission Act* in accordance with any rules issued by the Commission on reviews. Rule 016 establishes the timelines, procedures and test to be applied to an application for a review and variance of a Commission decision.

32. A review and variance application under Rule 016 ordinarily follows a two-step process, the first being a determination of the preliminary question of whether to grant a review, and the

² It is in AUC-Heritage-25, Exhibit 0006.02 of Proceeding 276, in which the Commission asked Heritage about the implementation of measures or strategies set out in Table 8 of the NIA to determine compliance with the PSL. AUC-Heritage 26 asks questions related to site selection and potential environmental impacts of soil disturbance.

second, if the review is granted, dealing with the substantive issues under review, as set out in Section 11 of Rule 016.

33. Furthermore, Sections 3(1) and 4(2) of Rule 016 state:

3(1) Subject to these rules, the Commission may review a decision on an application for review filed, within 60 days of the issuance of the decision, by a party to the decision, in a case where the applicant alleges that the decision contains an error of fact or law or jurisdiction.

...

4 (2) The Commission may review a decision relating to a hydro development, power plant, transmission line or gas utility pipeline, on an application for review filed within 60 days of the issuance of the decision by a person directly and adversely affected by the decision in a case where the applicant alleges the existence of new facts, a change in circumstances, or facts not previously placed in evidence as the facts were not known to the applicant at the time of the hearing.

34. As to the test for the preliminary question, Section 12 of Rule 016 states:

12 The Commission shall grant an application for review,

(a) with respect to a review of a decision, other than a review under section 4(1), if the Commission determines that,

(i) in the case where the applicant has alleged an error of law or jurisdiction or an error of fact, in the Commission's opinion, the applicant has raised a substantial doubt as to the correctness of the decision, or,

(ii) in the case where the applicant has alleged new facts, a change in circumstances or facts not previously placed in evidence, in the Commissions' opinion, the applicant has raised a reasonable possibility that new facts, a change in circumstances or facts not previously placed in evidence as the evidence was not known, as the case may be, could lead the Commission to materially vary or rescind the decision,

...

5 Commission findings

35. To determine the preliminary question, the Commission has considered the two grounds raised by Heritage in its review and variance application and its findings are set out below.

5.1 Error of law or fact

36. In its consideration of whether Decision 2011-239 contains an error, the Commission reviewed the NIA submitted by Heritage on May 13, 2010 in the original proceeding³. The Commission paid particular attention to Table 8 of the NIA and to Heritage's response to AUC-Heritage -25(a) which relates to the information in this table.

37. Also, the following provisions of Rule 012 are important:

1.2 Rule application

Subject to Section 2.2, this rule applies to an existing or proposed facility, the operation of a facility and noise related to construction of a facility.

Purpose of rule

The purpose of this rule is to ensure that noise from a facility, cumulatively with other noise sources, does not exceed the permissible sound level (PSL) calculated in accordance with this rule.

The rule provides a process to evaluate noise complaints relating to a facility.

1.3 Permissible sound level (PSL)

A facility must meet the PSL determined in accordance with Section 2.

For the purpose of determining compliance with this rule, noise is measured at a distance of 15 metres (m) from the nearest or most impacted dwelling in the direction of the facility, rather than at the property line of the land on which the dwelling is located.

38. Rule 012 also contains requirements for preparing an NIA for wind turbines and all proponents must comply with these requirements. The purpose of the NIA is to predict whether a facility will meet the PSL determined in accordance with Section 2 of Rule 012. The Commission finds that Heritage is misconstruing Rule 012 if the intent of its mitigation measures set out in the NIA was to formulate a baseline within which all modeling results could be assessed. The purpose of mitigation measures is to ensure that a facility will meet the PSL, as required by Section 1.3 of Rule 012.

39. The noise predictions presented in the NIA were modeled in accordance with Rule 012 with all proposed wind turbines operating at full output power in mode 0. The NIA explains that the proposed wind turbines have 3 modes, namely mode 0, 1 and 2. In mode 0, the nighttime prescribed PSL of 40 dBA L_{eq} was not met. Therefore, Table 8 lists the turbines and indicates besides each one, mode 1, mode 2 or a dash. The note under Table 8 states that the dash next to a turbine "indicates that the turbine will be programmed such that it is not operational during the night time period when wind speeds are such that this would cause the PSL at receptors to be exceeded." Furthermore, in its response to AUC-Heritage 25, Heritage confirmed that the actual programming strategy, i.e. turbines off, turbines operating in Mode 1, and turbines operating in Mode 2, would meet the prescribed nighttime PSL. It is important to note the following responses submitted by Heritage to information requests AUC-Heritage 25 (b) and (c) and follow up information request AUC-Heritage 28 (a):

³ See Exhibit 3.18 of Proceeding 276 filed in response to Commission information requests dated March 10, 2010.

Question 25:

- (b) Explain how programming a higher cut in speed would achieve the measures/strategy of Table 8.
- (c) State the cut in speed that will be programmed to achieve the measures/strategy based on Table 8 and explain the reasons for selecting it.

Response:

(b, c, d) Heritage consultants advise the nighttime cumulative noise levels presented in Table 9 were derived considering the turbines operation in the modes outlined in Table 8 for the entire nighttime period, regardless of wind direction or speed; octave sound power values corresponding to the wind speeds specified in Section 3 paragraph 2 have been considered for each turbine model.

Question 28:

- (a) Once the turbines are operational, please explain how programming some of them to cut in at a higher speed would achieve the measures/strategy proposed in Table 8 of the Noise Impact Assessment, which is in essence the reduction of nighttime noise levels.

Response:

(a) Garrad Hassan advises in the first bullet point in Section 2.6 of Garrad Hassan Report, Issue A as submitted to the AUC, it is possible to program each turbine individually to automatically operate in anyone of its operational modes or deactivate during different periods of the day. Mode 0 represents full power with the highest sound emissions, and Modes 1 and 2 are reduced sound emission modes, with correspondingly reduced electrical power output; the turbine has a cut-in wind speed of 4 m/s and a cut-out wind speed of 25 m/s in all modes. It is proposed to use this control mechanism to reduce the sound emissions of the Heritage Wind Farm at night in order to meet the PSLs at the dwellings in the area during the night. All turbines will be programmed to operate in Mode 0 during the daytime period (7 a.m. to 10 p.m. as defined in AUC Rule 12), and the sound modeling undertaken indicates that this will not cause the daytime PSL at any receptor to be exceeded. **The turbines will be programmed to operate in the modes outlines in Table 8 of the Report during the nighttime (10 p.m. to 7 a.m.) in order to meet the nighttime PSLs at the receptors** (with the exceptions noted in Sections 3.1 and 3.2 of the Report)...

...It is not currently proposed to operate any of the Heritage turbines with a cut-in wind speed higher than the standard cut-in wind speed

of 4 m/s, nor is any variation of the turbine operation with wind direction proposed (emphasis added).

40. The Commission also considers important that in the NIA the use of a ground absorption factor of 0.8 is explained as follows:

GH considers the use of a ground absorption factor of 0.8 appropriate to account for local conditions.

41. The NIA also included a noise prediction using a ground absorption factor of 1.0; however, this prediction was provided for information only, as stated in Table 9 of the NIA.

42. Then the Commission scrutinized the following paragraphs of Decision 2011-239 which discuss the NIA to determine whether the Commission made an error in evaluating the evidence:

16. The NIA established a permissible sound level (PSL) of 50 dBA L_{eq} daytime and 40 dBA L_{eq} nighttime at 32 affected receptor locations in the area.

17. The proposed Vestas V90 wind turbines can be programmed to operate in one of three operating modes. Mode 0 is the loudest of the operating modes with a hub wind speed of eight metres per second (m/s) whereas modes 1 and 2 are sequentially the quieter operating modes. Modes 1 and 2 can be programmed to operate when noise level reduction is required, but at the expense of a reduced output power.

18. Heritage submitted that noise predictions presented in the NIA indicate that, with all its wind turbines operating at full output power in mode 0, the PSL of 50 dBA L_{eq} daytime will not be exceeded. However, the PSL of 40 dBA L_{eq} nighttime would be exceeded at 22 receptors. Therefore, Heritage proposed sound mitigation measures to insure compliance with the PSL during the nighttime period.

19. The sound mitigation measures entail the shutting down of a number of the proposed wind turbines and the programming of other proposed wind turbines to operate in mode 1 or mode 2, as required. In particular, Heritage proposes to shut down 57 wind turbines, to program five wind turbines to operate in mode 1, and to program 33 wind turbines to operate in mode 2 during the nighttime hours, i.e. from 10 p.m. to 7 a.m.

20. Heritage stated that, with the mitigation measures implemented as described above, the predicted sound levels will comply with the nighttime PSL of 40 dBA L_{eq} at the majority of the receptors. However, there are four receptors (namely receptors 38, 39, 6 and 32) where sound levels are predicted to exceed the nighttime PSL by 0.3 to 0.9 decibels.

21. Accordingly, Heritage confirmed, in response to information request AUC-Heritage-25(a), that it would implement the sound mitigation measures (more particularly)described above to ensure compliance with

the nighttime PSL initially when the turbines are commissioned and committed to conduct actual sound measurements to test compliance with the PSLs. However, Heritage requested that, should actual sound measurements show that sound levels exceed the PSL at a receptor location, it be given a period of time to bring the sound level into compliance with AUC Rule 012. If compliance cannot be achieved after this period of time, Heritage agreed to make adjustments to the turbine's operational modes so that the sound level at the receptors does not exceed the PSL. Heritage also requested that, if the actual sound measurements show that the sound levels at the receptors are significantly below the PSL, Heritage be permitted to reprogram the wind turbines to increase power output and a corresponding increase in sound levels, but not exceed the PSL.

43. The Commission stated in footnote 2 in Decision 2011-239 that the sound mitigation measures referred to in paragraph 21 were specified in Table 8 of Exhibit 3.18, the NIA.

44. The Commission made the following findings in Decision 2011-239 regarding the NIA and noise impacts:

35. The Commission accepts the noise predictions presented in the NIA study indicating that the daytime PSL of 50 dBA L_{eq} will not be exceeded with the addition of the proposed wind farm and all of its wind turbines operating at full output power in the mode 0 configuration. However, the Commission finds that the proposed wind farm would not meet the nighttime PSL of 40 dBA L_{eq} without noise mitigation measures. Therefore, the Commission considered the noise mitigation measures included in the application. The measures proposed by Heritage consist of the shutting down of 57 wind turbines, the programming of five wind turbines to operate in mode 1 and the programming of 33 wind turbines to operate in mode 2 during the nighttime hours.

36. The Commission understands that, with the implementation of the above noise mitigation measures, predicted sound levels will be below the nighttime PSL of 40 dBA L_{eq} at the majority of the sound receptors. However, at receptors 6, 32, 38 and 39, the predicted sound levels range between 40.3 dBA to 40.9 dBA, i.e. slightly above the nighttime PSL. The Commission is aware that the cumulative predicted noise levels were calculated using noise source data from several manufacturers and information from other wind turbine operators in the study area. Acoustical computer models may overstate the noise predictions because of the standards used and may vary based on the assumptions and input data entered, i.e. a ground attenuation factor of 0.8 applied globally and no consideration of noise source directivity.

37. Therefore, the Commission accepts that, with the implementation of the noise mitigation measures committed to by Heritage, the proposed wind farm is likely to comply with the nighttime PSL. To ensure that the

Wind Farm complies with AUC Rule 012 when operating, the Commission orders the implementation of these sound mitigations measures. Furthermore, the Commission directs Heritage to conduct a post-construction comprehensive noise study under AUC Rule 012's "representative conditions" to verify that Heritage complies with the rule at the following receptor locations where noise is predicted to be close to or above 39 decibels: 3, 4, 6, 7, 13, 21, 26, 28, 32, 33, 36, 38, 39, 40 and 42.

38. The Commission further notes that Heritage requested that, should sound measurements show that sound levels exceeds the PSL at a receptor location, Heritage be given a period of time to bring the sound level into compliance. In this respect, the Commission finds that, should actual sound measurements exceed the PSL at any receptor, the noise mitigation measures Heritage committed to must be implemented immediately. If additional mitigative measures are required to ensure compliance with the PSL at all receptors then Heritage will bring forth these measures to the Commission as soon as possible so that these additional measures can be implemented.

39. Regarding Heritage's request to reprogram the turbines to increase power output, if post-construction sound measurements show that the sound levels at receptors are significantly below the PSL, the Commission directs that, before any turbine reprogramming to increase output is undertaken, Heritage files an application for AUC approval to implement any operational changes to the wind turbines.

45. The Commission considers that the NIA is clear that the nighttime PSL is 40 dBA L_{eq} and that, the NIA was based on the sound predictions using the ground absorption factor of 0.8. Without noise mitigation measures, the nighttime PSL would be exceeded at 22 receptors. Table 8 sets out the measures proposed to meet the nighttime PSL. Heritage confirmed that the nighttime PSL would be exceeded if the turbines with a dash beside them were operational. Also, Heritage submitted that it did not propose to operate any of the turbines with a cut-in speed higher than the standard 4m/s. Therefore, it was reasonable to conclude on the evidence filed by Heritage, that for Heritage to meet the nighttime PSL it had to shut down the specified turbines at nighttime. Also, the Commission rejects Heritage's argument that the shutting down of 57 turbines at nighttime was not its stated intention because this assertion is not supported by the evidence in the original proceeding.

46. In the provisions set out above of Decision 2011-239, the Commission's understanding was based on the evidence before it that the mitigation measures outlined in Table 8 of the NIA included the shutting down of 57 turbines in the nighttime period to ensure that the nighttime PSL of 40 at all receptors would be met, as required by Rule 012. Even with such an understanding, the Commission was concerned that Heritage might not meet the nighttime PSL when operational and directed Heritage to conduct a post-construction comprehensive noise study under representative conditions to verify that Heritage complies with Rule 012 at the specified receptor locations where noise is predicted to be close to or above 39 dBA L_{eq} .

47. As a result, as Heritage must comply with Rule 012, the Commission ordered Heritage to implement the mitigation measures set out in Table 8 of the NIA to ensure compliance.

48. However, the Commission wanted to afford Heritage a further opportunity to, based on the NIA, explain on the record of the original proceeding, its allegation that the Commission had committed an error in its understanding of the evidence and its findings. It asked specific questions on November 1, 2011 about the NIA and Table 8. Of note is that Heritage confirmed that the turbines flagged with a dash in Table 8 were not operating at the wind speed of 8m/s used in the NIA. Also, Heritage responded that, if these turbines were re-programmed, it would meet the PSL. However this response was then qualified by Heritage stating that there may be a need for an A2 adjustment to the PSL or for a noise management plan to meet the requirements of Rule 12. No such measures were mentioned as mitigation measures in the NIA submitted in the original proceeding.

49. As a result, the Commission is of the opinion that Heritage has not raised a substantial doubt as to the correctness the Commission findings in Decision 2011-239 regarding the mitigation measures, including the shutting down of 57 turbines at nighttime, as indicated in Table 8 of the NIA to meet the nighttime PSL at all receptors.

5.2 New Facts or Circumstances

50. Regarding the new information in the new Power Curve Data Brochure, the Commission notes that Heritage did not provide an explanation or interpretation of the specifications contained in the brochure in its review and variance submissions. Heritage only indicated that it intended to limit the noise levels by programming lower sound power output periods and programming the turbines to cut in at higher wind speeds. Heritage did not explain how the information contained in the brochure added to or changed the facts on record that the V90-3.0 MW wind turbines may be operated in different modes and that the NIA referred to the different modes of operation. Therefore, the Commission in its information request of November 1, 2011 asked for further information on the impact of these new operating modes in its consideration as to whether the new information could materially lead the Commission to vary Decision 2011-239.

51. The Commission is of the view that Heritage was unable to demonstrate that the V90-3.0 MW wind turbines are capable of operating in modes 3, 4, 5 and 6 that might result in a cumulative sound level at or below the nighttime PSL of 40 dBA L_{eq} at all the receptors to ensure compliance with AUC Rule 012. To the contrary, when asked if the NIA was redone to include the additional operating modes would the PSL be met, Heritage responded that “[a] noise management plan and corresponding curtailment procedures would be provided in order to comply with the PSL”. The Commission is of the view that, although there is new information, the issue centres on whether the V90-3.0 MW wind turbines when operational will meet the nighttime PSL. The Commission finds that information and submissions filed have not raised a reasonable possibility that the nighttime PSL might be met.

52. Based on the above, the Commission finds that Heritage has not shown that the new facts or circumstances regarding the additional operating modes could lead the Commission to materially vary or rescind Decision 2011-239 and remain consistent with Rule 012.

53. Heritage argued that Rule 012 does not have the flexibility to address the unique operating parameters of a wind farm and proceeds to ask the Commission to proceed as though the rule had been changed or, in effect, change the rule in this proceeding. Any changes to the requirements of Rule 012 can only be made through the Commission's rule making process. Rule changes are not made in individual decisions. To do so would create too much uncertainty in all facilities processes.

54. The Commission is currently considering possible changes to Rule 012. The Commission, based on the submissions of Heritage, has decided that it will add consideration of the issues raised by wind masking, as it relates to the unique operating parameters of wind farms, to its review of Rule 012 and invites Heritage and all other interested parties to participate in this review. A notice to that effect will be issued shortly.

6 Decision

55. For all the reasons set out above, the Commission dismisses the Heritage review and variance application.

Dated on January 24, 2012.

The Alberta Utilities Commission

<original signed by>

Willie Grieve
Chair