

Appendix C
First Nations Comments and
Proponent Responses

Dokie Wind Energy

Wartenbe Wind Energy Project

First Nations Comments and Proponent Responses

Submitted to:

British Columbia Environmental Assessment Office
Canadian Environmental Assessment Agency



helimax

Wind energy consultant for the world

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June 29, 2006

Preamble

The following document addresses the issues, comments and questions, raised in the report entitled “**Third Party Review of Wartenbe Wind Energy Project -- Interim Consultant’s Report (Draft #1)**”. This report was prepared by LGL Limited, for the **McLeod Lake Indian Band, Saulneau First Nation and the West Moberly First Nations**.

This document includes a table with responses to issues raised in the application review stage.

Table 1: Application Review Stage Issues and Proponent Responses

Notes:

1. Refer to section 2.2 of the LGL report for explanations on these issues
2. Comments received by LGL only. First Nations comments will be provided at a later date

Issue	First Nation or LGL	Proponent Response and Proposed Action
Not enough information on the concrete batch plant.	LGL	Recent assessments on concrete requirements and local supply indicate that concrete would most likely be supplied by a redi-mix supplier in Chetwynd, eliminating the need for a concrete batch plant.
Not able to determine the adequacy of the ground- truthing coverage for TEM because the number of TEM polygons was not presented.	LGL	The following quote from the LGL report suggests that this issue has been resolved: “We understand that the regulatory agencies, who have examined this issue in more detail than us, are satisfied with the TEM mapping. We consider the issue to be resolved”.
No justification is provided for the threshold of 40% area coverage to attract people to harvest high bush cranberries.	LGL	The 40% threshold was described in the TAR as: “an estimate of the proportion of productive area that would be required to attract people to harvest in that area”. This threshold was developed based on personal experience and professional judgment.
Concerns about wetland ecosystems and their potential use by waterfowl and amphibians.	LGL	A low proportion of waterfowl were observed within the assessment area during the migrating and breeding periods. In addition, less than 1% of the wetlands within the assessment area will be lost as a result of the project. It was therefore considered that effects to waterfowl would be not significant. Effects to amphibians from the development of the project were not identified as a potential area of concern by the Technical Working Group.
Concern about the use of one traditional use plant (high bush cranberry) to represent all traditional use plants in the assessment.	LGL	As part of the environmental constraints mapping, DWE worked with the First Nations in the area to identify sites of high environmental, social and cultural values that were in the vicinity of the proposed wind energy project. As part of this initiative, DWE took a number of elders by helicopter to the Wartenbe Ridge area to identify important sites on the ground. These sites were then used in the environmental constraints analysis to adjust the locations of the wind turbines to avoid these sites. It is understood that some of the sites that were identified related to traditional harvesting sites, as well as spiritual and cultural sites. Hence, the project footprint already takes into account means to minimize conflicts with traditional harvesting sites. As stated in the TAR, “information on the specific types of plants that are used for medicinal, cultural and food purposes was considered to be confidential and was not available to the biophysical team” It was therefore not possible to model this VEC on a full range of traditional use plants of particular interest to the affected First Nations. However, in a proactive effort to provide some information on this issue that might be of some interest to First Nations, <i>Viburnum edule</i> was selected as a species that could be modeled effectively and was used by a large number of aboriginal groups. The assessment of Project effects to this species was not intended to represent the issue of traditional use in its entirety. Traditional harvesting effects were more

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		broadly addressed as part of the archaeological – traditional use studies.
It is predicted that 44.4 ha of provincially rare ecosystems will be adversely affected by the Project, and 2.6 ha will be permanently lost. Is this acceptable?	LGL	The project effect was determined to be not significant. It is also important to keep in mind that the identified effect is largely associated with the matrix /01 ecosystem in the BWBSwk1. This ecosystem is relatively resilient to project effects and except in areas of substantial soil disturbance is expected to simply revert to an earlier seral stage. It is also important to note that the actual loss of rare ecosystem area is very small related to the available area of rare ecosystems.
How accurate are the estimates about bird migration numbers and estimated direct mortality from the turbines?	LGL	The estimates of direct mortality are based on observed mortality rates from other wind energy projects that use similar turbine types that are proposed for the Wartenbe project. The estimated total number of migrating birds was derived from the passage rates recorded at the survey sites. This estimate was used in an attempt to quantify the magnitude of the potential effects. It was identified by the Technical Working Group that no site specific data on passage rates for the Wartenbe area exists, so the baseline data that was collected represents the first set of data for the area. The accuracy of this data, and the subsequent estimates, is influenced by its quality and the number of outliers that are not representative what is actually happening. The accuracy will be improved by the collection of additional data. Spring surveys were conducted during 2005. Additional avifauna studies will be conducted during spring to fall of 2006 and 2007 for the Wartenbe project area.
Concern that radar observation time and timing were insufficient to allow high confidence conclusions about direct mortality effects on migrating birds.	LGL	Additional radar sampling is being conducted during the spring of 2006. Radar stations will be distributed throughout the project area. Furthermore, DWE is supporting two UNBC students to do intensive NSERC funded research from the end of March to October 2006 and again in 2007. Their research will employ use of two radar units, as well as direct observations. These students will continue to add to the baseline databases for the Dokie and Wartenbe project areas.
Birds that were heading for the proposed turbine lines, but disappeared from radar before reaching them, should have been assumed to have crossed the turbine line as a worst case scenario.	LGL	This recommendation will be taken into account during analyses of data from the spring 2006 bird survey. Results of these surveys will be presented in the supplemental report to be completed by late June 2006. Furthermore the 2005 data will be revisited and re-analyzed on the assumption that birds that were on a bearing that would cross the ridge will in fact do so.
How is direct mortality reversible?	LGL	Direct mortality is considered reversible when the numbers of birds lost will be replaced by natural recruitment within 1-2 years and will not significantly affect local or regional population numbers.
General concern about the confidence level that can be assigned to conclusions regarding the significance of project impacts on birds.	LGL	During the initiation of the project it was identified by the Technical Working Group that there was not a lot of existing data and information on birds in the project area. Baseline surveys were conducted to capture as much data as possible. DWE is also working in conjunction with UNBC to support research studies in the project area to capture more data on migrating birds. This research is to continue during the spring to fall periods of 2006 and 2007. A wildlife monitoring plan is also being developed that will ensure data on breeding and migrating birds is captured during the pre-construction, construction and post-construction periods.
Carcass monitoring for birds and bats should be carried out for	LGL	A Wildlife Monitoring Plan is being developed with the support of CWS and MOE. Based on recent discussions it was identified that 2 years of carcass surveys should be conducted. The

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minimum of 2, but preferably 3 years.		results of the carcass surveys will be reviewed after the first year to determine the level of effort required for the second year.
More baseline work would be required to confidently describe bat use of the area.	LGL	Reconnaissance-level bat surveys were conducted to provide an indication of bat diversity and relative habitat use in the area. Preferred bat roosting habitat (i.e., older age class stands with suitable wildlife trees) was also mapped to quantify the potential effect of the project. As resident and breeding bats have been shown to have a low risk of mortality from wind energy developments, fall radar surveys (including multiple sessions throughout this period) were used to assess the level of potential effects on migrating bats.
Main ridge line (with Turbines 1-33) was not assessed for its importance as a wildlife movement corridor.	LGL	<p>The likelihood of the proposed Wartenbe Wind Energy Project seriously impacting broad-scale wildlife movements is low. Except during construction, we do not anticipate that the project will result in displacement of animals from the vicinity of the wind energy project. Information collected to date at other wind energy developments suggests that most wildlife species, and in particular elk, are not displaced by these types of projects. Furthermore, results from elk responses to various industrial or urban activities suggest that they habituate relatively easy, as long as mortality risks are not associated with the disturbance.</p> <p>To further address the issue of wildlife movements in relation to the Project, a wildlife monitoring plan will be initiated that will monitor the effects of the project on local wildlife populations and potential interactions with land users. The plan will include studies on birds (passerines, other small birds, raptors), bats, and terrestrial wildlife, with a focus on ungulates, and especially elk via a GPS-telemetry study. The plan includes the collection of pre-construction baseline information, as well as data on target wildlife groups during the construction and operation phases. Another key focus of the plan will be monitoring elk grazing on private land, and interactions with cattle, including a cattle mortality-monitoring program to determine any potential project-specific effects related to elk-cattle interactions.</p>
Methods used to develop the wildlife habitat suitability mapping were not clearly described.	LGL	<p>Wildlife habitat mapping is a recognized provincial standard described in detail in the document "<i>British Columbia Wildlife Habitat Rating Standards</i>" published by the B.C. Resources Inventory Committee. The document is available on-line at: http://ilmbwww.gov.bc.ca/risc/pubs/teecolo/whrs/assets/whrs.pdf.</p> <p>Briefly, Habitat suitability maps are a management planning tool useful for decision-making, and in particular, addressing industrial effects on wildlife habitat across broad areas. Habitat suitability is defined as the ability of the habitat in its current condition to provide the life requisites of a species. Ratings indicate the value of a habitat to support a particular wildlife species for a specified habitat use compared to the best habitat in the province (the provincial benchmark). Ratings are done by qualified biologists familiar with the species in question and habitat conditions in the study area. Any and all background information is used to make qualified assessments for each mapped polygon. Background information in this case included background vegetation classifications, field verification, and other similar ratings from another nearby project (the reference to the Canfor project). From this information, qualified</p>

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		assessments are made for each polygon based on a habitat suitability rating scheme ranging from: 1 = comparable to the best habitat for this species in the province, to 6 = no substantial habitat value to this species.
Incidental observations of wildlife use and sign are insufficient to properly ground truth habitat suitability modeling and to describe actual wildlife use of the area.	LGL	<p>Field surveys were conducted for the key wildlife groups (avifauna, bats) and vegetation. Surveys of this nature permitted biologists to cover the majority of the study area on foot. Incidental wildlife observations are an extremely useful and vital method of obtaining ground-truthed information related to species presence and use.</p> <p>Further, during the pre-construction inspection, key wildlife habitat features (e.g., wildlife trees, stick nests, wetlands, bear dens, etc.) will be noted on or near the final project footprint. This information will augment the already considerable amount of site-specific information gathered to date. Identification of these site-specific features is not always possible during the impact assessment stage, as detailed project footprints (e.g., specific location of turbine towers) are unavailable. These detailed footprints are typically a resulting product from the impact assessment process, where areas of concern are avoided in an attempt to mitigate any potential effects.</p> <p>It should be noted that an environmental constraints mapping exercise was completed as part of the Project Design. Sensitive environmental features (e.g., wetlands) and important traditional use sites were identified and appropriate buffers (e.g., no construction of turbines within 50-100 m) were applied around these sites. The proposed turbine locations in the application reflect avoidance of these sensitive sites.</p> <p>Finally, wildlife occurrence and distribution data will be collected for key wildlife species where issues have been raised. Specifically, elk movement and habitat use will be monitored at the Wartenbe site. A field program will be developed that will: 1) determine to what extent elk are displaced by the wind energy development; and 2) monitor elk and cattle interactions, and assess how the project may increase elk depredation of hay resources or result in increased cattle mortality from natural predators.</p>
Concern that the western most ridge (with Turbines 34-39) may not have been considered properly in the impact assessment considering its apparent importance to wildlife (and rare ecosystems).	LGL	<p>All areas within the study area were considered equally within the habitat analyses and modeling for terrestrial wildlife. While certain areas may appear of greater value than others, all analyses must be considered at a larger regional level, particularly for larger terrestrial species such as ungulates, bears, and marten. The amounts of highly suitable habitat in and around the western ridge are relatively small, lessening their importance at a regional scale.</p> <p>Further, site-specific values are not always possible to discern entirely from pre-construction assessments. For this reason, follow-up wildlife occurrence and distribution data will be collected for key wildlife species where issues have been raised. A wildlife monitoring program will be initiated that will monitor the effects of the project on local wildlife populations and potential interactions with land users. This will include a GPS-radiotelemetry study of elk.</p>

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		<p>Follow-up studies such as these will be used to determine the regional importance of areas such as the western-most ridge.</p> <p>Additional avifauna studies will also be conducted along Wartenbe Ridge during spring to summer of 2006 and 2007. These studies will involve radar surveys, as well as direct observations of migrating birds. Breeding bird surveys will also be conducted.</p>
Criteria used to determine significance of cumulative effects may be inappropriate.	LGL	The criteria used to determine cumulative effects, as well as the methodological approach, are detailed in section 6.1 of the Application. These are considered appropriate by the consultants involved in the Project, namely Axys-Jacques Whitford and Helimax Energy.
List of Commitments is incomplete.	LGL	A revised table of commitments will be submitted to the EAO by end of June 2006.