

## **Appendix C**

### **First Nations Issues and Proponent Responses**



**Dokie Wind Energy Project**

**First Nations Issues  
and Proponent Responses**

Submitted to:

British Columbia Environmental Assessment Office  
Canadian Environmental Assessment Agency



Wind energy consultant for the world



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## ***Preamble***

The following document addresses the issues, comments and questions, raised in the report entitled “**Third Party Review of Dokie 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

Comment #	Issue	First Nation or LGL	Proponent Response and Proposed Action
	Not enough information on the concrete batch plant.	LGL	<p>A concrete batch plant that is directly associated with the project is considered as a second option for the supply of concrete to the project. The most likely scenario is that concrete will be sourced from local suppliers providing that the necessary product is available at an acceptable commercial rate.</p> <p>Considering the local conditions and the project demand for concrete, the supply is a significant issue and will require detailed evaluation of options after the project demand parameters are better defined. If a batch plant installation is necessary for the project, the location and construction will comply with all relevant guidelines and regulations. It is understood that the approval process for the installation of such a plant is currently undergoing review, and by the time the project is in construction the installation will be governed by regulation rather than permit. The following notes address the issues of:</p> <ul style="list-style-type: none"> <li>▪ plant location</li> <li>▪ production schedule</li> <li>▪ probable water demand rate for concrete production</li> <li>▪ water management on the site, including discharge</li> </ul> <p>The location of the potential plant has not been established. A portable plant would likely be located at a convenient low elevation location, possibly at the aggregate source. A second option may be to provide the “seed” for a cooperative opportunity for a First Nation’s venture developing a new concrete supplier in the region. In this case, the site location will reflect longer-term regional needs. In either case, the aggregate source must be confirmed and proven for adequate supply and quality as part of the decision process.</p> <p>The construction schedule may require concrete July 2007 through October 2007, and June through October 2008 and similarly in 2009, depending on the finalized schedule that will be dictated by BC Hydro. The maximum total daily concrete production rate depends on the finalized schedule as well as the final foundation design.</p> <p>Using conservative estimates for foundation concrete requirements based on the most recent information, and the maximum probable construction demand from the site to meet full site</p>

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			<p>development over two full construction seasons, the water demand for concrete production will be approximately 75 lpm. (based on 12 hour / day production schedule, average of 3 foundations per day at average peak production). The withdrawal rate would be lower with the addition of storage, lower concrete demand per foundation or lower production rate).</p> <p>The water use plan for any batch plant will be optimized to the local conditions. A well supply is the preferred source and will be developed to provide high quality clean water. Water will be managed entirely on the site through the use of containment berms, settling ponds, fences and collector drains, and shall include all process water and storm water. Water discharge from the site will be through settling ponds to ensure suspended solids are controlled to a level that meets or exceeds the requirements of the receiving environment. Chemical quality shall be monitored and pH adjusted if required. The water quality discharge requirements shall be established using the principles of Best Practices in consultation with agencies including DFO, and meeting all of the regulatory requirements.</p> <p>In summary – if the establishment of a concrete batch plant is required, then the location and design of any such plant will be consistent with the tenants of environmental regulations and protection. The location of such a plant cannot, at this time, be reliably fixed because key project parameters remain unknown until the development schedule is indicated by BC Hydro. In addition, current uncertainties including regional development and aggregate supply options must be better understood before recommendations can be made to proceed with a plant development and where to precisely locate it.</p>
	No justification is provided for the threshold of 40% area coverage to attract people to harvest black huckleberries.	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.
	Concern about the use of one traditional use plant to represent all traditional use plants in the assessment.	LGL	<p>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 Dokie project 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.</p> <p>The TAR states that, “As 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, correlations between potential occurrences of these plant species in specific biogeoclimatic units and the effects of the Dokie Wind Project on these biogeoclimatic units (and</p>

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			indirectly on medicinal, cultural and food plants) were not possible.” However, in a proactive effort to provide some information on this issue that might be of some interest to First Nations, <i>Vaccinium membranaceum</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.
	Is the loss of 5.8 ha of provincially rare ecosystems acceptable to government regulators?	LGL	Project effects to rare ecosystems were determined to be not significant. It is also important to keep in mind that the identified effect is largely associated with ESSFmv2 /06 ecosystems. This ecosystem typically occurs in small riparian strips that are most often a small component of compound TEM polygons. The spatial analysis of project effects to compound TEM polygons assumes that all component ecosystems are evenly distributed, despite the fact that many of these small /06 areas will be protected within riparian buffers.
	Is the loss of over 12 ha of ecosystems that typically support high cover of terrestrial lichens of concern for winter caribou habitat?	LGL	Based on telemetry data collected over several years in the region, caribou only infrequently use the ridge areas where the project is proposed, and where potential winter habitat for caribou may occur (see Figure 10.2 in the Technical Assessment Report). The herd tends to use areas west of the where the Project footprint is proposed. Therefore, disturbance to a relatively small area of habitat supporting terrestrial lichens is not expected to affect the regional caribou population.
	What are the bounds of accuracy for the estimate of 3.1 million migrating birds, and consequently for the estimates of direct mortality?	LGL	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.
	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 was 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	A supplemental report, which will provide the results observed from the spring 2006 bird survey, will analyze the data based on this recommendation. 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.
	Breeding bird surveys carried out between Noon and 14:00 do	LGL	DWE recognized that breeding bird surveys conducted after 10:00 did not follow standard protocols. At the time of the survey logistical constraints did not allow for data capture earlier in

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	not follow acceptable protocol. Surveys were insufficient to characterize breeding bird use of the area.		the day. A decision was made to proceed with the survey in order to capture some data as opposed to no data. On most days, surveys were conducted between 0500 and 11:00.
	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. Also DWE is 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 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.
	Is displacement of 1000 to 1400 breeding birds from the loss of 462 ha of ESSFmv ecosystem acceptable?	LGL	It was identified that there is extensive breeding habitat available to birds in the region. It was also noted that after construction some of the cleared areas will be left to regenerate. It is anticipated that this will provide habitat for some of those bird species that were initially displaced.
	Carcass monitoring for birds and bats should be carried out for minimum of 2, but preferably 3 years.	LGL	A Wildlife Monitoring Plan is being developed with the support of CWS and MOE. Upon recent discussions it was identified that 2 years of carcass surveys will likely occur. The results of the carcass surveys will be reviewed after the first year to determine the level of effort required for the second year.
	More survey time 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.
	Methods used to develop the wildlife habitat suitability mapping were not clearly described.	LGL	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: <a href="http://ilmbwww.gov.bc.ca/risc/pubs/teecolo/whrs/assets/whrs.pdf">http://ilmbwww.gov.bc.ca/risc/pubs/teecolo/whrs/assets/whrs.pdf</a> .  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

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			background vegetation classifications, field verification, and other similar ratings from another nearby project (the reference to the Canfor project). From this information, qualified 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>
	With the focus on Key Indicator Resources, the assessment might have been limited by failing to identify species or guilds that actually use the project area.	LGL	As stated in the EIA documentation, KIRs were chosen based on a series of criteria including conservation status, abundance and distribution in the study area, vulnerability to effects from the proposed project, and socio-economic and regional importance. The KIRs selected represent a set of species that optimize these criteria. As well, a major factor in KIR selection is the amount of available information, data, and knowledge of the species and its local distribution and abundance. While species such as amphibians and small mammals can be good indicators of ecologically important values, a lack of localized information on habitat relationships, distribution, and abundance severely limits their value as indicators, given that ecological predictions in these

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			cases is extremely prone to errors. Rather, larger more abundant species, such as the KIRs selected for this project are less prone to predictive errors due to a better understanding of their natural history, habitat affinities, and local abundance and distribution.
	Concern about the confidence assigned to the conclusions regarding the significance of project impacts on caribou.	LGL	Woodland caribou around the Dokie Ridge area – belonging primarily to the Moberly Herd – have been extensively studied by government agencies (Dale Seip, BC Ministry of Forests, Prince George) using radiotelemetry techniques. Analysis of 3032 caribou locations over 3 years (2002 to 2005) of tracking illustrate that only 3 of the 3032 locations were within the proposed project footprint. Government biologists studying this herd believe that caribou in this area generally do not use the ridge associated with the Project, but rather make extensive use of ridges farther west of the Project (Dale Seip, personal communication). On this basis alone, it is reasonable to conclude that project effects on woodland caribou will be minimized, simply due to the lack of overlap between caribou and the Project footprint. This conclusion was supported by further analysis of habitat ratings, modeling, and field observations.
	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.