

**APPENDIX B  
COMMITMENTS REGISTER**



**BLUE HILL WIND ENERGY PROJECT  
ENVIRONMENTAL IMPACT STATEMENT**

Appendix B Commitments Register  
December 2017

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**Table B-1 Commitments Register for Blue Hill Wind Energy Project**

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1	Sound level limit will be at or below 40dBA at all receptors within the LAA	Section 5.0			N/A	N/A	<ul style="list-style-type: none"> <li>Design and siting of Project</li> </ul>	Met	<ul style="list-style-type: none"> <li>If there are changes to the Project layout or turbines selected for the Project are different than those used in the Noise Impact Assessment, a new noise model will be run to determine the SLL at receptors and siting adjustments made if necessary.</li> </ul>		Upon confirmation of the turbine selection and finalization of layout prior to construction		
2	Avoid plant SAR and SOMC during construction	Section 7.4.2.2; Appendix C, Vol. 1, Section 7.9.1			N/A	Saskatchewan Ministry of Environment (SKMOE)	<ul style="list-style-type: none"> <li>Construction activities will not occur within plant activity restriction setback guideline, unless previously discussed and approved by SKMOE</li> </ul>	In progress	<ul style="list-style-type: none"> <li>No plant SAR have been detected during the 2017 rare plant surveys.</li> <li>Current Project layout avoids locations of plant SOMC and the 30 m setback in accordance with the 2017 Saskatchewan Activity Restriction Guidelines for Sensitive Species.</li> <li>Any changes to the Project layout will avoid known locations of plant SOMCs and the 30 m setback. If avoidance is not possible, SKMOE will be consulted.</li> </ul>		Upon completion of construction activities		
3	Reduce or avoid introducing non-native invasive plant species from Project construction activities into the PDA.	Section 7.4.2.2; Appendix C, Vol. 1, Section 7.10			N/A	SKMOE	<ul style="list-style-type: none"> <li>Non-native invasive plant species are not introduced into the PDA, or are appropriately managed to prevent impacts to native vegetation communities</li> </ul>	In progress	<ul style="list-style-type: none"> <li>General contractor field management representatives will confirm vehicles and equipment are free of soil and vegetative debris prior to entering the PDA.</li> <li>Known populations of non-native invasive plant species within the PDA will be flagged for avoidance by the Environmental Monitor.</li> <li>Post-construction, prohibited and noxious weeds in the PDA will be documented, reported to landowners and authorities, and a management plan developed in consultation with experts.</li> <li>Stabilizing stockpiles left for longer than 30 days by covering or by seeding, sodding, mulching or equivalent.</li> </ul>		Upon completion of construction activities		
4	Reduce or avoid impacting areas of native prairie by Project construction activities	Section 7.4.3.2; Appendix C, Vol. 1, Sections 7.2 and 7.9.1			N/A	SKMOE	<ul style="list-style-type: none"> <li>Maintain area of impact to within designated PDA</li> </ul>	In progress	<ul style="list-style-type: none"> <li>Prior to construction in native prairie, the boundaries of the vegetation clearing will be staked in the field. If possible, construction activities will be modified to avoid native prairie. The Construction Contractor will ensure no construction disturbance occurs beyond the staked limits and that edges of sensitive areas adjacent to work areas are not disturbed.</li> </ul>		Upon completion of construction activities		

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5	Recover impacted areas of native prairie to similar pre-disturbance vegetation communities.	Section 7.4.3.2; Appendix C, Vol. 1, Sections 7.2 and 7.9.1			N/A	SKMOE	<ul style="list-style-type: none"> <li>Impacted areas have similar vegetation communities post-reclamation as pre-construction</li> </ul>	In progress	<ul style="list-style-type: none"> <li>Where active reclamation is deemed necessary by a qualified environmental monitor, sites on native vegetation types will be re-vegetated to their pre-disturbance conditions using appropriate Certified No. 1 seed (Canada Seed Growers' Association) unless it is not available for a chosen reclamation species. The topsoil/seedbank will be preserved then reapplied during post-construction reclamation.</li> </ul>		Upon completion of post-reclamation monitoring		
6	Reduce or avoid impacting wetlands by Project construction activities	Section 7.4.4.2; Appendix C, Vol. 1, Sections 7.4 and 7.5			N/A	Water Security Agency (WSA)	<ul style="list-style-type: none"> <li>Maintain area of impact to within designated PDA</li> <li>Wetland protection measures are properly implemented</li> </ul>	In progress	<ul style="list-style-type: none"> <li>Maintain 100 m setback from wetlands for Project infrastructure, where possible.</li> <li>Maintain existing vegetation buffers around wetlands, where possible.</li> <li>Submit notifications and applications to regulators for anticipated wetland effects, as required, with the appropriate lead time.</li> <li>Use appropriate sedimentation and erosion control measures (e.g., silt fencing, swamp/mud mats) and direct surface runoff away from wetlands and waterbodies.</li> <li>Minimal alteration of surface water drainage patterns and installation of culverts as required to maintain existing flows.</li> <li>Refueling or fuel storage activities will occur at least 100m from wetlands. in the event that refueling takes place in areas less than 100 m away from wetlands, contractor will have secondary containment/spill prevention measures in place.</li> <li>Environmental Monitor will confirm setbacks from wetlands and waterbodies.</li> </ul>		Upon completion of construction activities		

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7	Avoid sensitive wildlife features whenever possible	Section 8.4.2.2; Appendix C, Vol. 1, Section 7.9.2			N/A		<ul style="list-style-type: none"> <li>Approved activity restriction setbacks of sensitive wildlife features are respected</li> </ul>	In progress	<ul style="list-style-type: none"> <li>Algonquin, with the assistance of the Environmental Monitor, will review proposed activities with the Construction Manager and will recommend site-specific impact management practices.</li> <li>Conduct vegetation clearing activities outside the primary bird nesting season (April 26 to August 15) as per Environment and Climate Change Canada guidance (ECCC 2017).</li> <li>Conduct construction in areas of native land cover types and perennial cropland outside the breeding bird period (April 26 to August 15; ECCC 2017). When not possible, conduct pre-construction surveys to identify the location and status of bird nests and other wildlife features. If an active nest is found, Algonquin will consult with SKMOE to identify appropriate mitigation measures, such as species-specific setback distances and activity timing restrictions.</li> <li>Adjust temporary workspaces to avoid setbacks around identified sensitive features (including sharp-tailed grouse leks and northern leopard frog breeding pond). Where this is not possible, alternative mitigation options will be developed in consultation with SKMOE.</li> </ul>		Upon completion of construction activities		

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8	Reduce the amount of direct mortality of birds and bats during operation through adaptive management.	Section 8.4.3.2; Appendix C, EPP, Vol.2, Section 2.0			N/A		<ul style="list-style-type: none"> <li>Apply mortality thresholds as indicated in EPP Vol 2, Section 2.0.</li> <li>Report mortality rates of birds and bats in both per MW and per turbine rates.</li> </ul>	In progress	<p>The following have already been, or will be, considered in development of the Project:</p> <ul style="list-style-type: none"> <li><b>Turbine Design:</b> turbines erected for the Project will only be current monopole designs.</li> <li><b>Electrical Collection Lines:</b> all electrical collector lines on private land will be buried to reduce potential fatalities that may occur with overhead collector lines.</li> <li><b>Meteorological (MET) Tower Design:</b> permanent MET towers erected to collect meteorological data during operation of the Project will be monopole design to reduce collision fatalities.</li> <li><b>Infrastructure Setbacks:</b> the design and planning of infrastructure locations has considered SKMOE (2017b) recommended activity restriction setbacks for sensitive species (e.g., wildlife features, rare plants). Where infringement of the guidelines may be necessary, evidence-based setbacks appropriate for the sensitive feature will be discussed with SKMOE for approval.</li> <li><b>Appropriate Lighting:</b> the most effective lighting technology determined to reduce or avoid attracting birds that meet Transport Canada Safety Regulations will be applied to the Project.</li> <li><b>Cut-in Speeds:</b> wind turbines will only operate when minimum cut-in wind speeds for selected turbine designs have been exceeded.</li> <li><b>Turbine Spacing:</b> the planned turbine spacing for the proposed Project will exceed 300 m, currently the permitting layout has a minimum turbine spacing at 408 m.</li> <li><b>High Power Turbines:</b> permitting is being sought for 56 wind turbine locations for the proposed Project; the number of turbines will depend on the turbine manufacturer and model to be considered.</li> <li><b>Fencing:</b> Fencing of the land in which turbines, substations or other infrastructure at the Project should be minimal so as to avoid collisions of birds. The only permanent fencing to be planned for the Project will be for the substation.</li> </ul>	<ul style="list-style-type: none"> <li>A post-construction mortality monitoring program will be implemented for a minimum of 2 years following commissioning of the Project, with a potential to monitor at 5-year intervals starting on year 5 of Project operation depending on fatality rates observed in the first 2 years. Results of the mortality monitoring program will be provided to SKMOE. Should a substantive mortality event occur, a cause-effect analysis will be conducted and additional mitigation options will be considered. Should operational mitigation measures be required, the initial monitoring period may be extended beyond the initial 2 years after discussion with SKMOE, but will not extend beyond an additional 2 years to assess the effectiveness of additional mitigation measures. All results of the post-construction mortality monitoring program will be reported to SKMOE.</li> <li><b>Increased Cut-in Speeds:</b> if collision mortality at individual turbines or turbine clusters exceeds mortality thresholds, and analysis of event data suggests that collision risk is greatest at moderate wind speeds, then evaluation of reasonable cut-in speed increases may be considered in consultation with appropriate regulatory agencies. Increased cut-in speeds would apply to turbines or turbine clusters where higher mortality occurs and during high collision risk periods.</li> <li><b>Periodic Shut-down of Turbines:</b> if specific periods are identified where mortality rates exceed thresholds for bats, and following reasonable consultation with regulatory agencies, individual turbines or turbine clusters in areas where mortality rates exceed thresholds may be periodically shut down, during known periods of high bat abundance to reduce or avoid collision mortality.</li> </ul>	Throughout Project operation		

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9	Avoid of known heritage resources in the PDA	Section 9.4.2.2; Appendix C, EPP, Vol.1, Section 7.11			N/A	Heritage Conservation Branch (HCB)	<ul style="list-style-type: none"> <li>Construction activities do not interact with known heritage resource sites</li> </ul>	In progress	<ul style="list-style-type: none"> <li>A 200 m avoidance buffer for siting permanent Project infrastructure and a 100 m avoidance buffer for temporary construction activities will be established around heritage sites EbNs-2 and EbNt-6 by a professional archaeologist to protect them from construction vehicles and disturbance.</li> <li>A 15 m buffer will be staked around heritage site EbNs-3 by a professional archaeologist to prevent vehicle disturbance during construction.</li> <li>Algonquin, with the assistance of the Environmental Monitor, will contact the HCB of the Saskatchewan Ministry of Tourism, Parks, Culture and Sport if new heritage resources are discovered and work will be suspended at those sites.</li> </ul>		Upon completion of construction activities		
10	Reduce impacts to agricultural land activities during construction	Section 10.4.2.2; Appendix C, EPP, Vol.1, Sections 7.1 and 7.18			N/A	SKMOE	<ul style="list-style-type: none"> <li>Construction activities have minimal interference with agricultural activities</li> <li>Early communication with landowners</li> </ul>	In progress	<ul style="list-style-type: none"> <li>Landowners will be provided the location of Project infrastructure to minimize inefficiencies in agricultural operations.</li> <li>Landowners with Project infrastructure that reduce the agricultural production of their lands will be financially compensated through the individual land lease agreements.</li> <li>Communication of construction timelines with landowners and tenure holders that have a land agreement with Algonquin.</li> <li>Posting of appropriate signage in advance of Project activities to indicate access restrictions.</li> <li>Potentially halt construction when soil conditions become saturated or installing matting.</li> <li>Minimize vehicle traffic on exposed soil.</li> <li>Establish erosion and sediment control measures.</li> </ul>		Upon completion of construction activities		

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11	Reduce impacts to recreational and commercial harvesting activities, and non-consumptive recreational activities by Project construction activities	Sections 10.4.3.2 and 10.4.4.2			N/A	SKMOE	<ul style="list-style-type: none"> <li>Construction activities have minimal disturbance with recreational and commercial harvesting activities, and non-consumptive recreational activities</li> <li>Early communication with landowners, lessees, and outfitters</li> </ul>	In progress	<ul style="list-style-type: none"> <li>Communication of the dates for specific Project phases and a well outlined Project layout to allow the landowners, lessees, and outfitters to plan their harvesting schedule throughout the life of the Project.</li> <li>Minimize clearing to the extent feasible to reduce change in available habitat.</li> <li>Posting of appropriate signage in advance of Project activities to indicate access restrictions.</li> </ul>		Upon completion of construction activities		
12	Reduce or avoid impacts to groundwater use by Project construction activities	Section 10.4.5.2; Appendix C, EPP, Vol.1, Section 7.8			N/A	WSA	<ul style="list-style-type: none"> <li>Construction activities do not interfere with groundwater use</li> </ul>	In progress	<ul style="list-style-type: none"> <li>Confirm well locations prior to construction.</li> <li>Complete a site-specific geotechnical investigation at each of the proposed wind turbine sites and record depth to groundwater, if encountered.</li> <li>Communicate key dates for specific Project phases and distribute a specific Project layout to allow the landowners and lessees (groundwater well licensees) to plan water use activities proactively.</li> </ul>		Upon completion of construction activities		
13	Create positive effects on local employment and business opportunities and reduce or avoid disruptions to local businesses.	Sections 11.4.2.2 and 11.4.3.2			N/A	N/A	<ul style="list-style-type: none"> <li>No compliance measures</li> </ul>	In progress			Upon completion of construction activities; throughout operation and decommissioning		
14	Reduce or avoid impacts to community services and infrastructure	Section 12.4.2.2; Appendix C, EPP, Vol. 1, Section 7.16, and EPP, Vol. 2			N/A	N/A	<ul style="list-style-type: none"> <li>Adequate consultation with community services providers</li> </ul>	In progress	<ul style="list-style-type: none"> <li>Coordinate with emergency response providers in the area to facilitate appropriate communications, understanding, and cooperation.</li> <li>Develop and implement an ERP for the Project that meets Project needs. The plan will address field health services, emergency call-out procedures, and fire response plans, and other concerns.</li> <li>Consult and coordinate with local authorities, service providers and businesses with respect to worker accommodation and to identify potential accommodation service gaps or issues.</li> </ul>		Throughout all Project phases		



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15	Reduce or avoid traffic safety hazards, potential for accidents, and direct mortality from vehicle collisions.	Section 14.5.2			N/A		<ul style="list-style-type: none"> <li>Reasonable steps are taken to reduce or avoid traffic safety hazards, and potential for accidents</li> </ul>	In progress	<ul style="list-style-type: none"> <li>The Environmental Monitor will confirm that traffic control procedures (i.e., signage indicating speed limitations) have been implemented within the PDA.</li> </ul>	<ul style="list-style-type: none"> <li>Conduct a complete incident investigation following any traffic incident to determine if corrective action may be taken to prevent future events.</li> </ul>	Upon completion of construction activities		

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