

Arrowstone Wind Project

Investigative Licence Application

Section A – Project Overview

- Project and purpose;
- Location, size and main features of project; and,
- Construction schedule for the term of the license.

A general outline of the investigations that will be conducted i.e. wind speeds and frequency, bird species and habitat, geology etc. Please indicate specifically how data will be collected to wind speed.

Arrowstone Wind Project will be sitting around Arrowstone Protected Area. The polygon files include map and Shape File for investigative license application.

Reference to drawing Arrowstone_50k and 20k, the applying polygon locates at 10km north of Cache Creek.

The prospected wind farm will be consisting of 10x 1.5 MW turbines (hub height 85 m, blade diameter 82 m) or equivalent others. The project size will be 15MW with an estimated capacity factor at 32%.

The proposed project investigation activities schedule will be as following:

Table 1 Activities Schedule

No	Activities	Time
1	Site prospecting	Start from June 2013 for at least 1 year
2	Wind Speed and Frequency Measurement	Start from July 2013 for at least 1 year
3	Reconnaissance level biophysical and archaeological surveys	June. 2013
4	Bird species and habitat	June. 2013
5	Road Access and land use surveys	June. 2013
6	Geological and terrain surveys	June. 2013
7	First Nations considerations	June, 2013
8	Public Consultation	June, 2013
9	Interconnection Feasibility Study - Preliminary	June, 2013

Section B – Wind Monitoring Strategy

The strategy provides a description of each individual MET tower location, information relating to the land use and access on site, a description of the MET tower, and an outline of the installation plan and tower operation.

Four MET tower locations have been identified to monitor and gain an understanding of the wind regime across the applied area. The Four locations are outlined in the Table 2 as shown below.

The total number of MET towers to be installed on the project will be determined as the wind monitoring strategy reveals results.

Table 2 MET Tower Locations

Name	North	West	Priority in Overall Strategy	Description
Mast 1	50° 54.247'	121° 19.105'	TBD	Located besides an existing planation/cut block, the mast tower is adjacent to existing logging road branched from 5100a Road at an approximate elevation of 1668m. Access to the mast location through existing logging road. It is expected that a small amount of tree removal will be required for the installation. Should this MET tower locations be used in the future, an assessment of the locations at this time will take place and a free use permit will be applied for if necessary.
Mast 2	50° 55.888'	121° 8.000'	TBD	Located besides an existing planation/cut block, the mast tower is adjacent to existing logging road branched from 5200a Road Fst' at an approximate elevation of 1751m. Access to the mast location through existing logging road. It is expected that a small amount of tree removal will be required for the installation. Should this MET tower locations be used in the future, an assessment of the locations at this time will take place and a free use permit will be applied for if necessary.

Please also reference to Shape and KMZ files for the exact polygons.

The met tower to be installed will be a 80m tower supported by guy wires at several heights along the tower, reference to attached side profile of the MET tower. The base of the mast will have a footprint up to 3mx3m and concrete to a depth of approximately 2.5m. The mast will be surrounded by four anchor points located 90 degree apart at approximately 60m from the base. For normal soil conditions dead man anchors will be used which will leave a footprint of approximately 1mx1m and contain concrete up to a depth of 2.5m. For softer soils, the use of piles will be required and for rocky soils, rock anchors will be utilized. A sample drawing has been included with this application for illustrative purposes only.

An experienced contractor will install each MET tower with a crew of few technicians over a period of three days via the use of a boom truck. If any ground clearing is required, this will be completed followed by the digging of holes for the four anchors and foundation. The holes will then be filled with concrete by a cement truck. The tower will tilt up once the concrete has set. The installation will be documented to ensure that our collected data is accurate and bankable. A road use permit will be obtained for the cement truck as advised by the Ministry of Forests, lands and Natural Resource Operations. No new road is expected to be built for the investigation purpose.

The data recorded at the tower will be sent to Golden AE via a solar powered satellite link. This information will be quality checked weekly to ensure accurate operation. Data collection will commence upon installation and will continue for a minimum of 12 months and potentially up to three years. Maintenance will occur bi-annually at minimum, in addition to any occurrences of suspected malfunctioning equipment.

Section C – Attachment Description

- The polygon outlines on a scale of 1:20,000 and 1:50,000 drawing with a north arrow, showing the exact perimeter boundaries of the application area of 4,836 hectares. The plan includes watercourses, district lots and major landmarks as reference points. The investigating polygons and investigative windmast polygons have been shown in Shape file as well. The drawing shows dimension of 200m x 200m wind energy measurement structure (MET Tower) locations in relations to the boundaries of the application area. The dimensions of the equipment/structure as well as a structure profile(s) (side view) are included in the application package. The MET tower locations have been made in the a separate Shape file.
- Google Earth KMZ link to indicate the exact polygon of the investigated site and MET towers.