

# INVESTIGATIVE LICENCE APPLICATION INVESTIGATIVE PLAN FOR WIND ENERGY DEVELOPMENT: OKANAGAN A WIND PROJECT

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# Enerfín



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#### 1. ENERFIN BACKGROUND

Elecnor is one of Spain's leading companies in engineering, development and construction of projects relating to infrastructures, renewable energies and new technologies with over 50 years of continuous growth, a presence in 30 countries, and 12,000 employees.

Elecnor created Enerfín in 1997 to become a developer and investor on the wind energy market. Enerfín contributes its human, technical and financial skills, applied to the management of wind energy investment projects, to all its development stages.

Enerfín is involved in 903 MW of operating wind power located in Spain and Brazil, and its first wind Project in Canada, located in the province of Quebec, is due to start operation by the end of 2013.

Enerfin's main fields of operation are as follows:

- Technical studies: Assessment of wind potential and production studies. Environmental impact studies and environmental monitoring of wind farms. Study and selection of technology. Basic infrastructure and installation projects.
- · Economic and financial studies.
- Administrative processing of projects.
- Management of permits and authorisations.
- Construction and detailed engineering projects.
- Supervision of "turnkey" construction.
- Management of the operation (technical, administrative, accounting and financial).

Enerfin created Enerfin Developments British Columbia in 2013 to develop wind energy projects in British Columbia.

#### 2. PROJECT AND PURPOSE

The objective of this application is for investigative activities related to the development of wind power generation facility to supply electricity to the BC. The Investigative License Application is for the area named Okanagan A (the "Project") and encompasses 4732 ha. The site is located within of Regional District of Thompson Nicole and North Okanagan.



Enerfin expects that the Project could produce up to 200 MW, but during the investigative phase, Enerfin will assess the Project feasibility, the site capacity and will also perform preliminary consultation with stakeholders and First Nations if required.

The Project would comprise components typical of wind project infrastructure, such as: wind turbine generators (WTGs) and foundations, WTG lay down areas and crane pads, a substation, access road(s), electrical collection system network, meteorological masts, temporary storage areas and an operation & maintenance building. The Project will also include a transmission line to interconnect to the BC electrical grid, but the exact transmission route has not yet been determined.

The site will be mainly accessed using existing forestry roads, where possible. If not, access to the site will be achieved by ATV or foot. Upgrading the existing road and/or the construction of new corridors may be required for the meteorological mast installation.

Enerfin has identified several locations for initial meteorological towers, they are shown on the detailed map attached by a label "OK-M11" to "OK-M15". Prior to any changes being made with or to improvements, and prior to any activities such as drilling or road construction, Enerfin will notify the Authorizing Agency as soon as the information is known to maintain the tenure in good standing.

The site is in the vicinity of Enerfin's Okanagan B y C investigative licence application. The wind resource buffer is 1 km in the prevailing wind direction as per the Crown land Use Operational Policy. The setback, if required, will be shared equally between the two investigative licences areas proposed by Enerfin and no wind turbine will be located within it.

## 3. MAPS REQUIRED

As required by the application form, a General Location map at a scale of 1:250,000 is included in 0Appendix A and a Detailed Site Map at a scale of 1:60,000 is included in Appendix B.

#### 4. MANAGEMENT PLAN

The following is a general outline of the investigation plan to be conducted after reception of the Investigative Licence (IL).

A chart of the intended activities by type, year, season and potential impacts is presented below to assist Authorizing Agency staff in assessing the use of the land. The intended activities are further described in Table 4-1 below.



In case of making changes in the investigative activities, that include placement of improvements that were not part of the original submission of the investigative plan, Enerfín will notify the appropriate Authorizing Agency staff as soon as the information is known, prior to making the changes and to maintain the tenure in good standing.

**Table 4.1: Intended Activities** 

| Activity                      | Brief Description of<br>Activity  | Time Period  | Potential Impact  |
|-------------------------------|---|--|---|
| Wind Measurement              | Site visit, install and maintain mast(s).   | When weather permits within the 4 years after the reception of the Investigative Licence (IL)                                  | If required, vegetation clearing at the mast location and to access the site. |
| Construction Feasibility      | Site visit  | When weather permits after reception of the IL   | None  |
| Environmental Screening       | Analysis of desktop critical issues, preliminary field surveys and preliminary consultation with stakeholders if needed | During 1 <sup>st</sup> or 2 <sup>nd</sup> summer after reception of the IL   | None  |
| Turbine Layout                | Site visit and field surveys if needed  | Within the 1 <sup>st</sup> or 2 <sup>nd</sup> summers after reception of the IL  | None  |
| Environmental Assessment (EA) | Surveys: birds, bats, wildlife, vegetation, water bodies, visual impact, archaeology, land use, etc.                    | Preliminary studies 2 <sup>nd</sup> year after reception of the IL. Full EA if Electricity Purchase Agreement (EPA) is awarded | None  |
| Geotechnical studies          | Shallow boreholes.  | After 3 <sup>rd</sup> year after reception of the IL (If EPA is awarded)   | If needed, minor<br>vegetation clearing and/or<br>water sourcing.             |

#### **4.1 CONSTRUCTION FEASIBILITY**

Enerfin will visit the site, when weather permits, after the reception of the IL in order to better assess the construction feasibility of the Project. After the site visit, and in case construction is considered not to be feasible, further work as installation of met mast or environmental screening will not be performed. The proponent will advise MFNRO in the event they decide to abandon interest in the tenure.



#### 4.2 WIND RESOURCE ANALYSIS

Enerfin has identified five met mast positions and intends to determine during a site visit which of these positions is the most feasible and representative, once the IL has been assigned.

The installation will take place within the 4 years after reception of the IL, when weather permits. Initial wind measurements are taken by installing an initial met mast at a representative site location and collecting data for at least 12 months. Once the site's wind resource has been assessed, Enerfin will determine whether to install additional masts to aid in the modeling of wind speeds. The on-site activities related to the wind measurement will last up to 4 years.

The appropriate permits will be sought and/or replacement applications will be prepared if any of the following activities are required for the meteorological mast installation: access road construction, upgrade of an existing access road or vegetation clearing.

The identified mast coordinates are presented in Table 4-2 below.

| Mast ID | Easting | Northing |
|---------|---------|----------|
| OK-M11  | 1441265 | 604822   |
| OK-M12  | 1438618 | 601277   |
| OK-M13  | 1442353 | 601995   |
| OK-M14  | 1446656 | 602622   |
| OK-M15  | 1453377 | 602481   |

Table 4.2: Met Mast coordinates (NAD1983\_BC, Albers)

Given that no site prospection has been realized yet, the final mast coordinates might differ slightly. A  $100 \text{ m} \times 100 \text{ m}$  box around these coordinates has been delineated for the area potentially required for clearing to install the met masts therein.

#### 4.3 ENVIRONMENTAL SCREENING

Prior to initiating the Environmental Assessment (EA) process, Enerfín will undertake an environmental screening of the site which will include a site visit during the  $1^{st}$  or  $2^{nd}$  summer after reception of the IL.

The environmental screening will include desktop critical issues analysis, preliminary field surveys and preliminary consultation with stakeholders and with interested First Nations to discuss the proposed activities and identify potential concerns.



#### **4.4 TURBINE LAYOUT**

Field visits will be required to confirm the land available for siting wind turbines and its feasibility.

In order to further investigate potential wind turbine locations, Enerfin will visit the area within the  $1^{st}$  or  $2^{nd}$  summers after receipt of the IL. The number of WTGs will be determined during the investigative phase.

#### 4.5 ENVIRONMENTAL ASSESSMENT

Enerfín intends to initiate the EA process in accordance with the *Environmental Assessment Act* [SBC 2002, c43] and will undertake all studies required in the Environmental Assessment Process, in order to receive an Environmental Assessment Certificate from the Environmental Assessment Office (EAO) after the reception of an Environmental Potential Act (EPA). The EA will include surveys and studies such as:

- Consultation with local communities, First Nations and governmental agencies;
- Birds, bats and wildlife surveys;
- Flora inventories;
- Waterbodies;
- Archaeological surveys;
- Visual, noise and electromagnetic interference impact;
- Land Use;
- Etc.

The appropriate permits will be sought for all the activities that might be required such as under the *Heritage Act* [RSBC 1996, c187] and *Wildlife Act* [BC Reg 340/82].

#### 4.6 GEOTECHNICAL INVESTIGATIONS

It will need undertake on-site geotechnical investigations to properly characterise the prospective wind farm's ground conditions in the vicinity of proposed turbine foundations and access roads.

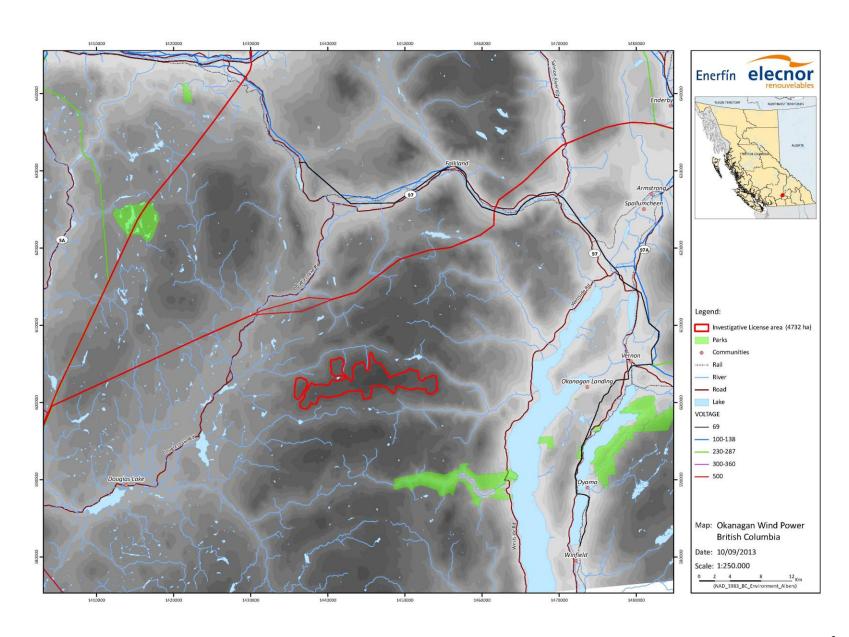
The geotechnical investigations will include the boreholes. The appropriate permits will be sought for all the activities that might be required to perform the drilling, such as vegetation clearing or water use.

Enerfin will undertake the geotechnical investigations after award of an EPA for the Project.

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### **APPENDIX A GENERAL MAP**



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## **APPENDIX B DETAILED SITE MAP**

