



Farmers and Wind Energy

Wind farms can be built on various types of terrain including forested, mountainous and agricultural. Wind farms built on agricultural land are becoming more and more common as the energy they produce becomes more and more in-demand, both in Quebec and elsewhere in the world. Wind turbines and agricultural activities can coexist particularly well when care is taken to ensure that the needs of both farmers and wind energy producers are properly met.

Developing a Wind Farm

When a site is identified as suitable for a wind farm development, an in-depth study of its potential must be carried out and this involves the installation of wind measurement masts. In addition, ensuring the integrity of the land is essential to developing a wind farm project. The process of wind analysis lasts for at least one year before the ideal positioning of wind turbines can be determined.

Maintaining good relations with the community and negotiating agreements in principle with agricultural property owners are also essential. When such agreements are in place and a wind farm development project has been approved, easement contracts are drawn up and the final locations of the wind farm's various components can be determined.

The location of the wind farm's components is decided according to wind currents and agricultural activities, bearing in mind any limitations or constraints discovered in environmental studies. For example, access roads follow the edges of lots in order to minimize loss of useful land and may make use of pre-existing access routes.

Components of a Wind Farm:

- Access roads
- Wind turbines mounted on concrete bases
- Underground and aboveground electrical lines
- Transformer station
- Service building for storing wind turbine maintenance equipment

Research Phase

Once a development has been approved, environmental and feasibility studies and public consultations are carried out. This is to ensure respect for both the environment and stakeholders' requirements when determining the ultimate locations of a wind farm's various components once construction begins.

Wind Farm Construction

The first step in building a wind farm development is the construction of an **access road** leading to the location where wind turbines are to be erected. This road is roughly 7 to 10 metres wide and provides access to the work area in which wind turbines will eventually be located.

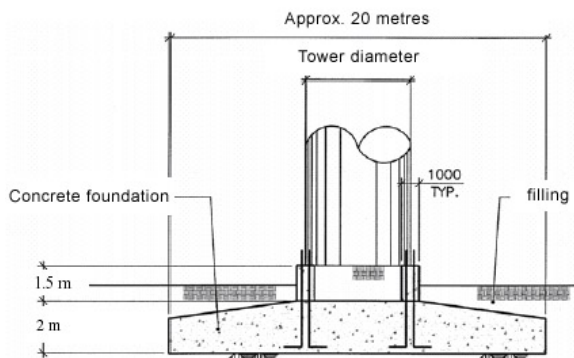
A **work area** is necessary to put up wind turbines on site. After a concrete foundation has been poured, the wind turbine is assembled and erected using a crane. Then, the nacelle is attached. The blades are the final component to be installed. The work area for this process is about 1 to 2 acres (1.2 to 2.4 arpents).

Kruger works closely with property owners during this stage in order to minimize impact on the property.



Wind turbine bases are built in such a way as to facilitate water runoff and thereby avoid negatively affecting agricultural activities. The illustration below shows typical base dimensions.

Typical Base



Operation Phase

The surface area required during the construction phase is significantly reduced once the operation phase begins. The access roads, which must be 7 to 10 metres wide during construction in order to allow cranes to move around the site, are only 5 metres wide during operation.

A functioning wind turbine takes up an area of 10 metres by 10 metres, including its transformer. The work area during the construction phase is therefore reduced to only 100 m², meaning that 90% of land can revert to its original state and agricultural activities can resume as usual.

In addition, access roads leading to wind turbines and other installations can be used as walking trails or by hunters and fishermen.

Benefits to Farmers

Farmers that allow part of their land to be used for wind turbines receive financial compensation from the developer, representing a fair exchange between the developer and farmers. In addition, wind turbines are designed in such a way as to minimize the effect they may have on agricultural activities.

