

Developing wind energy.



photo courtesy of Vision Quest

Planning a wind farm is a big task. It requires numerous municipal, provincial and federal approvals but the rewards make it worthwhile. Wind is a clean and renewable resource. It has no emissions and doesn't contribute to climate change.

Wind energy makes good economic sense and support for wind power in Canada is growing. From large energy companies to individuals looking to supplement their own energy needs – there's a great future in wind energy.'



Investing in nature's renewable resource.

Assessing wind as a resource.

There are a few key steps to take before a wind farm development can be approved. The first step is assessing the wind itself. Is there a strong and consistent wind? Scientists use wind resource assessments to evaluate the quality of wind on a given site for a period of at least one year. Wind speeds, direction, variability, and other factors all go into this careful stage of planning.

Environmental issues need to be taken into consideration right from the planning stage of the wind farm. For more information on this, please see our Wildlife Fact Sheet.

Accessing the land.

Like any other energy project, communities must be consulted and supportive of the wind farm before permits can be issued and the land can be developed.

A successful wind energy project is dependent on access to land on which there is a good wind resource. Energy companies may approach certain landowners and option their land. Once the project is approved land lease agreements are negotiated. A land lease specifies, among other things, the duration of time an energy company can use the land and the payments they will make to the landowner.

As with any other major power project, developers must seek municipal, provincial and federal permits before the project can go ahead. Land leases and contracts vary but typically pay a percentage of revenue in the thousands of dollars per year per turbine.

For more information on land leases, see our Community Benefits Fact Sheet.

In addition to collecting and analyzing wind resource data with instruments like the anemometer shown on the left, wind farm developers need to assess potential impacts to communications installations such as RADAR; microwave; wireless & cell networks



photo courtesy of Vaisala

Want to get involved in a wind energy project? These sources are a good start...

Connecting to the grid.

Another vital factor in determining the success of a proposal is proximity to the electricity grid. Many questions must be answered at the pre-planning stage: Does the energy carrier have space for the electricity? Will your site need upgrading? How will it connect to the grid and who will pay for that connection? The answers to these questions vary by province.

Finding buyers for wind power.

One of the most important factors to consider before developing a wind farm is who will buy the power. In many provinces, you must already have a buyer and a purchase agreement in place before permits are granted and turbines are installed. Other provinces don't have this requirement and electricity is bought and sold based on the daily market price.



Supporting wind energy is key to developing wind power projects here in Canada. Saying “yes” to wind is a great way to help us reduce the impact of greenhouse gases and move us into a cleaner future.

Support a local wind project
Contact your municipal government to see if a wind project is proposed in your community.

Build your own small wind project
Want to power your home, small business or community with wind energy? Visit our site: www.smallwindenergy.ca/en/SmallWind.html

Invest in wind energy: Help it grow and help us attain our goal of developing a clean, affordable alternative source of electricity. [www.environmentalchoice.com/English/ECP_Footer/About the Program/Criteria/Electricity Products/Renewable Electricity Investment Funds](http://www.environmentalchoice.com/English/ECP_Footer/About_the_Program/Criteria/Electricity_Products/Renewable_Electricity_Investment_Funds)

Make your land available to a developer
Do you have a good wind resource on your property? Want to benefit from installing a wind farm on your land? Find the answers to all this and more in our Land Use Fact Sheet.

Buy green power: For a list of companies across Canada that sell green power visit: www.canwea.ca/en/GreenPower.html

Task Name	Start to Finish: a wind farm typically takes 12 to 36 months
Land Acquisition	
Option to Lease Negotiations	
Option to Lease Agreements Signed	
Options converted to Lease	
Resource Analysis	
Meteorological Tower Permitting	
Meteorological Tower Installation	
Resource Analysis	
Environmental Work	
Environmental Assessment	
Other Site Research	
Interconnection	
Interconnection Request	
Interconnection Studies	
Interconnection Agreement	
Permitting & Public Consultation	
Open Houses, Info Distribution	
Federal	
Provincial	
Municipal	
Secure Equipment	
Order Turbines & Major equipment	
Equipment Delivery	
Construction	
Foundations	
Electrical	
Tower Install	
Nacelle/Blade Installation	
Commissioning	
Commissioning Complete	

Factors such as terrain, size of the wind farm and regional approval process all impact the total time for planning and commissioning a wind energy project. Despite these variables, the table above shows the typical sequence and duration for each of the steps to get a wind farm up and running.

