The win/win of wind energy.

photo courtesy of Vision Quest

If wind turbines are big, wind farms are even bigger.

So how can a large wind energy project respect the lay of the land? The answer lies in how they occupy only a fraction of the land they are sited on and work in harmony with its established uses. In rural settings, farming and ranching continue undisturbed. Even in urban areas, wind farms can fit in with the local streetscape.

Wind energy fits with the way we live today. This is the unique win/win of wind. Minimal land use. No emissions. Just a clean and renewable way to produce energy that peacefully co-exists with its neighbours.

Understanding the lay of the land.

The small footprint of wind.

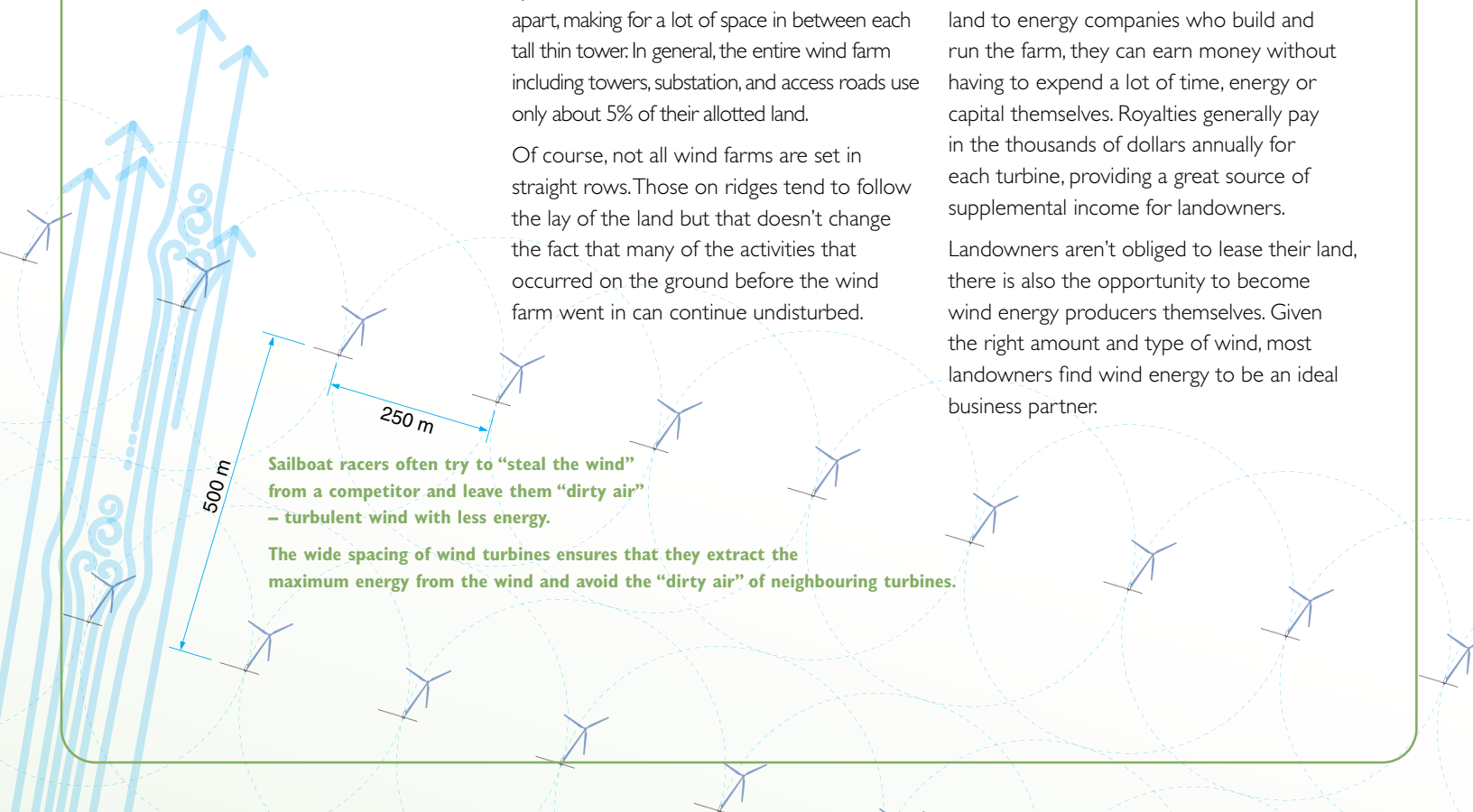
Turbines are tall – but they are also relatively slim. Generally each tower base is only 8 meters across and each turbine spaced 250 meters apart. Rows of turbines are set 1/2 kilometer apart, making for a lot of space in between each tall thin tower. In general, the entire wind farm including towers, substation, and access roads use only about 5% of their allotted land.

Of course, not all wind farms are set in straight rows. Those on ridges tend to follow the lay of the land but that doesn't change the fact that many of the activities that occurred on the ground before the wind farm went in can continue undisturbed.

The ideal business partner.

Wind energy is a special kind of commodity because it can deliver stable financial rewards with little or no effort on the part of landowners. Since landowners lease their land to energy companies who build and run the farm, they can earn money without having to expend a lot of time, energy or capital themselves. Royalties generally pay in the thousands of dollars annually for each turbine, providing a great source of supplemental income for landowners.

Landowners aren't obliged to lease their land, there is also the opportunity to become wind energy producers themselves. Given the right amount and type of wind, most landowners find wind energy to be an ideal business partner.



Sailboat racers often try to "steal the wind" from a competitor and leave them "dirty air" – turbulent wind with less energy.

The wide spacing of wind turbines ensures that they extract the maximum energy from the wind and avoid the "dirty air" of neighbouring turbines.

photo courtesy of Vision Quest

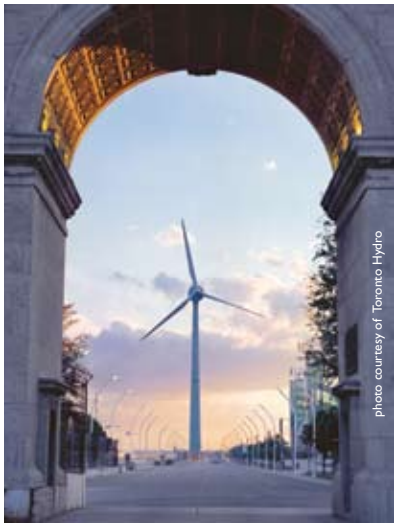


photo courtesy of Toronto Hydro

Surprising sites.

Wind farms can be found throughout Canada – and in some surprising places. Head Smashed in Buffalo Jump, a World Heritage site located in southern Alberta is one such example. Several wind farms have been located within view of this Heritage Site. There is also a wind farm in downtown Toronto and one on the docks of Hamburg, Germany. Wind farms continue to surprise and delight!

Wind farms and farming.

Rural communities are in a great position to develop wind energy. Wind farms and farming have a well-established and harmonious relationship in the US[1] and Europe. Farmers and ranchers in North America are fast realizing that they can use their land not only to raise cattle and grow crops but to harvest electricity from wind.

Imagine a farm or a ranch with a wind farm on it. Crops can be planted right up to the base of the turbines and harvested with the usual farm machinery, and because the presence of turbines doesn't disturb livestock, the sheep, cows and horses can continue to graze in and around the towers.

Wind farms do more than co-exist peacefully with agricultural uses of land, they help preserve what's precious to us. Because they provide an alternative income stream for farmers and ranchers, wind farms help farmers and ranchers weather the ups and downs of farming. Wind energy helps to preserve the rural way of life in Canada giving farmers, ranchers and their children the option of staying on the farm.[2]

photo courtesy of Brookfield Power

PROFILE

John Deere Wind Energy

Wind energy investment program for farmers in USA

John Deere has a vested interest in helping rural communities prosper. They understand the challenges faced by farmers and know wind energy can provide a new revenue stream for land owners where a good wind resource exists. To help make this revenue stream a reality, John Deere created John Deere Wind Energy (JDWE) for US farmers. Research is currently underway for a similar program in Canada.

JDWE can participate in economically viable wind energy projects in a debt and equity investor role. Typically, land owners participate as limited partners and, ultimately gain ownership of the project assets and the economic benefits.

At this time, JDWE is investing in utility-scale wind projects in the USA. This generally means projects with multiple wind turbines with a minimum capacity of 1.25 megawatts. This is generally due to the fixed cost for these projects and the ability to secure attractive power purchase agreements from utility companies or, for some projects, rural electric cooperatives or private companies. JDWE can work with developers and land owners to evaluate potential projects.

For more information on JDWE please visit: http://www.deere.com/en_US/jdc/product_financing/wind_energy/about/index.html

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CanWEA acknowledges the contribution of Natural Resources Canada.

1: http://www.rurdev.usda.gov/rbs/farmbill/index.html

2: http://www.ontario-sea.org/CommunityWind/CommunityWind.html