

COMMUNITY POWER CANADIAN STYLE

WindShare and the Toronto Renewable Energy Co-Operative

On the shores of Lake Ontario, only minutes away from the heart of Canada's largest city, stands North America's first and only urban-based wind turbine. Built in 1999, this monolithic collection of concrete and steel has become a fitting symbol of the power of community to initiate action. Although it stands as less than one sixth the height of the CN Tower, at 90 meters the turbine has nevertheless become an icon in its own right, representing an increasing awareness of green power among Toronto's residents. Geoff Girvitz and Judith Lipp report.

The turbine is the baby - albeit a large one - of a dedicated group of environmentalists working under the title of WindShare. This Toronto-based energy co-operative combines investor funds with community shares to generate clean energy on behalf of its members. The co-operative structure allows WindShare to successfully promote sustainability through a practical and affordable solution for members of its community.

The Co-Op model

The benefits of energy co-operatives, which include localizing energy sources and reducing electricity costs for members, are well documented. However, while one of the world's largest nations has a long history of co-operative endeavours in general - particularly in the agricultural sector - WindShare is its first green energy co-operative. As such, WindShare founders took many of their cues from Denmark, which was ground-zero for the creation of energy co-ops. Since the founding of the Wind Turbine Guild in 1980, this Scandinavian

kingdom has consistently led the way in developing wind power co-operatively.

Denmark now generates about 30% of its electricity from wind power, over a quarter of which is owned by collectives. Meanwhile, turbine manufacturing is a top export industry, employing 20,000 people. Examining the history and development of this movement provided invaluable insight for WindShare members, who adapted aspects of Danish models, among others, to fit their own needs. "The idea originally grew out of power co-op models in Denmark, Germany and the UK," says David Timm, Windshare's project manager. "It was the first thing that we looked at in doing a green power co-op in Canada, because there were no North American examples . . . It was a case of adopting models."

As innovative as WindShare's approach was to Canada, it was based on examples that date back to 1980, the founding date of the Wind Turbine Guild in Denmark. According to Flemming Tranæs, Chairman,

Danish Wind Turbine Owners Association, about three quarters of Denmark's annual 900-megawatt production is now privately owned - half by individuals, half by collectives. Energy co-operatives, especially those supplying wind energy, have become institutions encouraged by Danish law and taxation policy. Tax exemptions facilitate their development, making the financial investment attractive to both individuals and developers alike. It is this very pragmatic combination of economic incentive and community-oriented thinking that has created such ideal conditions for energy co-operatives. Until the mid-90s most of the wind energy projects in Denmark were installed on a co-operative basis. Today about 5% of the Danish population - well over a quarter of a million people - own a stake in a wind turbine or wind farm.

About the Authors

Geoff Girvitz is a Toronto-based freelance writer specializing in the areas of arts, pop culture, technology and sustainability. He can be reached at ggirvitz@emptyvessel.ca. Judith Lipp is a PhD student at Dalhousie University, Canada, where she is researching sustainable energy policy issues. She can be e-mailed at jlipp@dal.ca, but specific questions about TREC and the other energy co-operatives mentioned in this article are best directed at the individual groups mentioned (see other boxes).

Nuts and bolts

WindShare evolved as an extension of the Toronto Renewable Energy Co-operative (TREC), which was formed in 1998 by members of a neighbourhood-based environmental group. According to Timm, WindShare developed in response to the lack of government-led initiatives, while the turbine itself was built with the intent of profiling wind power as a highly visible solution to urban smog and climate change. In the throes of a still incomplete movement toward deregulation, the Ontario government seemed unlikely to pay more than lip service to sustainable methods of power generation at the time. In this light, members of TREC looked to themselves - and others who shared their ideals - for a solution that was not only economically sustainable, but also environmentally responsible.

With initial grant support from the Toronto Atmospheric Fund (a municipal fund to encourage local initiatives to combat global warming and improve air quality), TREC began to develop a proposal for a waterfront-located turbine. Gaining momentum from strong public support, TREC formed WindShare in 1999 and, shortly thereafter, entered into a joint venture with Toronto Hydro Energy Services (a green affiliate of the Toronto Hydro Corporation, which supplies electricity to the entire city). Timm says, "The project was starting to enter critical mass and we wanted those contracts to be signed by an entity that would look over the project in the long-term. Toronto Hydro had that capacity." WindShare and Toronto Hydro each own 50% of the turbine. Generated electricity is sold to Toronto Hydro through a power purchase agreement.

According to Timm, "These were in the pre-Kyoto ratification days. There was a lot of talk about what could be more sustainable. One of the big ideas was to take individual environmental action and do something collectively that would have an impact on local smog and area issues, as well as creating an icon for sustainability and the fight against climate change." (The Canadian government ratified the Kyoto Protocol at the end of 2002, committing to a reduction of greenhouse gas emissions of 6% below 1990 levels over the next decade).



The 750kW TREC turbine against the Toronto skyline

While progress was underway, TREC served as the developer of WindShare's half of the wind turbine project, creating both the business plan and share offering. The group also helped get the research ball rolling by conducting wind testing for the three years leading up to the selection of a site. By 2002, agreements for leasing the land and selling electricity were in place and TREC began marketing shares. As members of a share capital co-op, individual investors were required to purchase a minimum of five preference shares for \$100 Cdn. apiece (to a maximum of 50). Each member also had to purchase a single membership share for the nominal cost of \$1. Timm describes

it simply: "One member, one share. Everyone has an equal voice." Those votes help to shape fundamental choices in the operation of the co-operative.

When constructing an icon, it always helps to do so at an impressive scale. For WindShare, a 30 story height was deemed sufficient. Using a turbine mechanism constructed in Denmark, along with locally-sourced materials, including the tower and 24 metre blades, construction - or rather assembly - began in June of 2002. Weighing in at 121 tonnes, the turbine now generates approximately 1.4 megawatt hours of power annually, enough to power approximately 250 homes. Its location adds to its cache.

Exhibition Place, which is comprised of 192 acres of parkland and historical buildings, plays host to over 100 special events and 4.5 million visitors per year, guaranteeing an audience for the project. Yet in spite of its obvious advantages for increasing public awareness of wind power, Exhibition Place was not WindShare's first choice for a site.

The road to development

The co-op had initially targeted the Ashbridges Bay Treatment Plant, which owns space in Toronto's East End. However, due to delays on the initial land agreements, plans began to fall behind schedule. The unusual mix of municipal and federal ownership of the land introduced unforeseen levels of complexity to the process. While WindShare was struggling to meet an ever-expanding list of criteria, Exhibition Place's board of governors approached WindShare's board of directors. Exhibition Place was interested in hosting the turbine as part of a mandate to showcase alternative sources of green energy. Initially, WindShare's Board believed that the process was too far advanced for Ashbridges Bay to be usurped by another location. With every new delay, however, the alternative became more and more attractive and a decision was finally made to go with Exhibition Place as the primary site. Once WindShare shifted its plans, the transition was surprisingly smooth. "Compared to what we went through at the Ashbridges Bay treatment plant," David MacLeod, current president of WindShare says, "it was a stroll in the park. It's a lot easier to work with someone who wants to do this, instead of looking for obstacles to put into your way."

This viewpoint is just as true for community members as it is for property owners. In his 2004 book *Wind Power: Renewable Energy for Home, Farm, and Business*, author Paul Gipe speaks to Wisconsin activist Mike Manginin, who offers some succinct advice for those interested in garnering community support. "The key is for the community to identify the turbines as their own. Doing so may avoid the all too common conflicts encountered when developers, viewed as outsiders, propose projects that primarily benefit absentee owners. As one Dutch farmer has said, "your own pigs don't stink." A recent

WindShare/TREC award

An exciting surprise was in store for TREC/WindShare members at the Canadian Wind Energy Association (CanWEA) Annual Conference held in Montreal in October 2004. At the Awards Dinner Joyce McLean, Director of Environmental Affairs at Toronto Hydro Energy Services, announced that TREC and WindShare were the recipients of the 'Organization of The Year' Award, in recognition of the great role that our project has played in advancing the wind industry in Canada.

example of this issue is England's Whinash Windfarm, which has proposed to develop a site located near Tebay. Groups concerned with the "environmental impact" of the windfarm have vehemently campaigned against it, with members even threatening to chain themselves to turbines (which will undoubtedly prevent those turbines from being chopped down by renegade loggers). A failure to garner community support through communication and interaction has substantially increased the difficulty of the project.

David MacLeod points out, "If you're going to put up a wind turbine in a urban setting, there are even more hurdles to jump. Some developers have run into trouble because they've run into local opposition. It's really important the way that you approach a local community when you're going to build one. You have to engage people and let them know what your plans are and listen! If you just walk in and think that you're just going to build it, you're going to be in for a surprise. Once people have decided against it, it's hard to turn them around." As such, his advice is to engage the community first. Be open and transparent. Involve the community as much as possible. If they take pride in a project, then it will, in all likelihood, go ahead.

The forecast

WindShare's experiences have proven testament to this viewpoint and the success of the first round has encouraged the group to get a second turbine up and running. In spite of

being unable to determine a build-date, the co-op already has garnered over \$300,000 Cdn. from investors. "Although we have to say that we don't know when the turbine will be built," says David Timm we have money coming in every day because [people are] excited."

Even more exciting is the interest the Toronto icon has generated with people elsewhere. Community-minded greenies throughout North America are looking to Toronto and TREC for a model of urban renewable energy development that is run by the people and for the people. The Ontario Sustainable Energy Association is one body that is hoping to facilitate just such developments in other parts of the province by working with communities to establish their own energy co-operatives. Beyond Ontario as well, the co-op has received considerable levels of interest from many other communities wishing to replicate TREC's success.

In a country where new renewables like wind and solar have received limited support so far, TREC serves as an important symbol for the increasing acceptance of sustainable energy sources, as well as an icon for urban communities who want the places they live to remain liveable.

Acknowledgements

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Further information

For additional details visit the following websites:

- About TREC and Windshare: windshare.ca/
- The history of co-operatives in Denmark: www.windpower.org/en/articles/coop.htm
- The Greenpeace Energy Co-operative: www.greenpeace-energy.de/content/aktuell/international2.php4
- Our Wind Co-Op in the USA: www.ourwind.org
- The Ontario Sustainable Energy Association: www.ontario-sea.org