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Wind Energy Cooperative Development in Anglophone Canada

For the Canadian Co-operative Association

By Paul Gipe¹

Background²

In North America, renewable energy advocates and especially community renewable energy advocates often use the terms *community wind* development and *cooperative wind* development interchangeably. This derives from the effort of Anglophone North Americans to describe a uniquely continental European phenomenon of share ownership structures that allow local investment in, ownership of, and often managerial control of renewable energy projects. Mark Bolinger has explored at length the distinctions between the various ownership structures in Europe and their relevance to North America.³

Further, community renewable advocates include renewable energy systems owned individually, for example by a single farmer, as well those owned by First Nations, municipal governments, or other community entities. Community renewable advocates do make a distinction between large central station projects owned by state enterprises (Crown corporations), and projects smaller in scale that may or may not be connected at distribution voltages. For example, it is not unheard of for community wind projects in Germany and Denmark to be connected at transmission voltages. Some of these projects can be quite large.⁴

Community renewables may include small solar power systems operated by individual farmers and homeowners, but typically does not include small household-size wind turbines. Wind turbines are significantly more cost effective at commercial scale and the community wind movement in continental Europe has focused exclusively on commercial-scale turbines.⁵

Denmark has long been known for the high concentration of shared ownership wind turbines (fællesmølle), as well as wind turbines owned individually by farmers. Individuals and families own one-quarter of the 3,100 MW of wind

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² For more background on cooperative and community renewable energy development in Europe, see <http://www.wind-works.org/articles/community.html#Coop%20%20Community%20Wind>.

³ Community Wind Power Ownership Schemes in Europe and Their Relevance to the United States by Mark Bolinger; LBNL –48357, <http://eetd.lbl.gov/ea/EMS/reports/48357.pdf>.

⁴ The Paderborn Bürgerbeteiligung is comprised of several clusters of 1.6 MW turbines totaling 105 MW, http://de.wikipedia.org/wiki/Windpark_Sintfeld.

⁵ Wind turbines have increased significantly in size during the past two decades; thus, commercial-scale wind turbines of the 1980s seem small by today's standards.

turbines collectively in the country. This represents about 800 MW. Individual farmers own nearly two-thirds of the installed capacity, representing about 2,000 MW. Only one-tenth of Denmark's wind generation is traditionally owned by electric utilities or large corporations.⁶

Similarly in Germany, the Bürger or citizen wind movement forms limited liability companies that seek share investments from local landowners and neighboring communities. These Bürgerbeteiligung, or locally-owned companies, build community wind, solar, or biogas plants. Typically, the project developers raises as much equity as possible from the local community, then expands their net to the region, and finally, if there's not enough capital to build the project, they open investment up to the entire country.⁷

Nearly 40% of Germany's 20,000 MW of wind capacity, or 8,000 MW, is owned by farmers. Bürgerbeteiligungs own 10% of German wind capacity for another 2,000 MW. Half of German wind capacity—an investment worth nearly \$20 billion has been developed by landowners and small investors.

The German share-ownership model is now being used in France to a limited extent.⁸

I. Community Wind in Canada

Community renewable energy advocates in Canada are trying to replicate the Danish and German experience for several reasons. Though not without critics, there is widespread acceptance of wind energy in Denmark and Germany. This acceptance has been in part attributed to the greater degree of local ownership in Denmark and Germany than, for example, in Great Britain where there is a well organized, vocal, and effective opposition to wind energy. Moreover, some argue that renewable energy is too important to be left to traditional corporate development, especially development by private electric utilities and Crown corporations.

Renewable energy, because each generating plant is a relatively small unit, is also ideally suited for distributed ownership. Through local ownership more of the benefits of renewable energy development flow to the local community than otherwise. For this reason, many community renewable energy advocates see it as a means for local economic development.

Therefore, for a project to meet the definition of “community wind” it must deliver much if not all of its economic benefits to the “community” however loosely that is

⁶ Dave Toke, Community wind power in Europe and in the UK, University of Birmingham, 2005, <http://www.wind-works.org/articles/Wind%2029-3-Toke.pdf>.

⁷ See <http://www.wind-works.org/articles/BuergerbeteiligungHenningHolst2006.html>.

⁸ See http://www.wind-works.org/FeedLaws/France/Les_Haut_des_Ailes.html.

defined. Such a project may be a true cooperative as defined by law in each province, or it may be some other business structure that serves the same purpose.

Further, the community must exercise some, if not all, managerial control of the project. This test may exclude some projects where the community or local landowners are offered only a few turbines for local ownership out of a group and for which they control only their own turbines, if that.⁹

To meet the principal test of cooperative intent, managerial control must be exercised by one vote per investor. Limited Liability companies could meet the cooperative test if their bylaws stipulated that each investor has only one vote despite the amount of shares owned. Thus, an LLC may reflect the intent of both community wind and cooperative development, while a so-called “community wind” project may not meet either test (cooperative one-person-one-vote control, or significant local ownership).

Alberta

Though there is 400 MW of wind operating in Alberta, the projects are nearly all central station plants delivering generation at transmission voltages. There is no clear activity toward community or cooperative wind at this time.¹⁰ However, some ranchers in Alberta have developed their own small wind installations and others have expressed an interest in doing so.¹¹

Development of individually owned or community owned wind turbines are stymied by the province’s deregulated electricity market where low cost is the prime determinant of new generation. Contracts to sell power are available only on a bilateral arrangement or in response to a call for tender.

Nevertheless, Alberta’s Ministry of Agriculture and Food is sponsoring a BioEnergy and Biodiesel workshop April 23-24, 2007 at which on-farm wind generation will be one topic. The presentation will also include Ontario’s Standard Offer Program and how Advanced Renewable Tariffs work in Germany and France.¹² This will be the first formal presentation in Alberta on the topic.

⁹ To some advocates this is “community washing” where a traditional project is made to appear more community oriented than it might otherwise be.

¹⁰ Michele Aasgard, Alberta Community & Co-operative Association, maasgard@acca.coop, 780 451 5959, March 19, 2007.

¹¹ Several used wind turbines were installed in the Pincher Creek area in the late 1980s or early 1990s under a program that paid a premium price for generation. The program was discontinued. Sinnott Farm Services installed a used 65 kW wind turbine during the 1990s on their farm near Pincher Creek, Alberta. Other ranchers in Alberta have approached the author about doing the same as recently as early 2007.

¹² Kelly Lund, Alberta Agriculture and Food, Kelly.Lund@gov.ab.ca, 780 644 1197. Paul Gipe will give the presentation on on-farm wind, Advanced Renewable Tariffs, and Ontario’s Standard Offer Program.

Arctic Territories

There is no activity at this time.¹³

British Columbia

In mid 2006, Bear Mountain Wind Limited Partnership won a contract from BC Hydro's call for tender to build a 120 MW wind plant on Bear Mountain near Dawson Creek. The partnership is comprised of AltaGas Income Trust of Calgary, Aeolis Wind Power of Victoria, and Peace Energy Cooperative of Dawson Creek, British Columbia.

The Bear Mountain project was initiated locally by Peace Energy Cooperative. The 250-member cooperative obtained an investigative use permit from the province and lease for the site on Crown land. The wind project will entail sixty 2 MW Enercon E82 turbines and is the flagship project for the cooperative.¹⁴

Bear Mountain Wind was one of only three projects selected in BC Hydro's call for tender. When commissioned in 2009, the project will represent a total investment of nearly one-quarter billion dollars and be among the largest wind projects in Canada.

The cooperative charges \$200 for membership plus \$100 for each Class A share. Initial investment in the cooperative enabled Peace Energy to write their business plan, open an office, and hire an executive director, Valerie Gilson. The cooperative also began collecting meteorological data from Bear Mountain.

BC Hydro had monitored wind speeds on the mountain for some time, but abandoned the project when BC Hydro was restructured. Peace Energy assumed the data.

Believing that the cooperative was not technically competent to analyze the wind resource, Peace Energy sought out a private partner in the wind industry. They chose Aeolus Wind Power of Victoria.

Aeolus Wind Power has not yet built any wind project.

¹³ Andy Morrison, Artic Coop, amorrison@ArcticCo-op.com, 204 697 2243, March 21, 2007. Power Corp. in Nunavut in a study a few years ago concluded wind was not feasible because of the small diesel grids characterizing the region. While this is technically incorrect, there has been no activity to counter this conclusion.

¹⁴ Valerie Gilson, Peace Energy Cooperative, info@peaceenergy.ca, 250 782 3882, March 26, 2007, www.peaceenergy.ca.

The Bear Mountain Wind Limited Partnership allows Peace Energy Cooperative to invest in the project. The cooperative will begin offering shares this year and hopes to raise \$5 to 12 million for its investment in the project.

Depending upon the proportions of debt to equity in the project, Peace Energy's equity share could represent from 9% to 25% of the total equity in the project. Peace Energy will not have a controlling interest in the equity and will not have managerial control of the project.

The project is nearing the end of its environmental assessment process. Peace Energy expects the assessment to be complete by mid May, and certification by mid summer. Subsequently, final permitting for roads and other infrastructure will begin.

Because the project is on Crown land, final permitting will have to await development of a provincial policy on noise and set backs from wind turbines by the Ministry of Energy, Mines, and Petroleum Resources. This process has been underway for the past year.

Turbine delivery is scheduled to begin in 2008 with commissioning set for 2009.

While the wind project itself is not a cooperative, nor does the community have a controlling interest, the project was initiated locally by a cooperative. Peace Energy Cooperative also has plans for other activities in the community of Dawson Creek.¹⁵

Manitoba

There is one wind farm in Manitoba, a 100 MW project near the Francophone community of St. Leon. It is the only wind project in Manitoba.

In early 2006, local farmer Dan Mazier called a community meeting in Brandon, Manitoba to discuss forming a cooperative, Elton Energy, to develop a wind project in the community. Brandon is 220 km west of Winnipeg. The move was prompted by numerous private wind prospectors scouting the province after the launch of the 100 MW commercial project in St. Leon.¹⁶

By mid summer the group was meeting with one wind developer, Wincor Power Systems. Windcor, a private developer, has proposed a 100 MW wind project in the community with 10 MW set aside for community investment.¹⁷

¹⁵ Electric Wind, Lauren Griffin, The Co-Op Perspective, BC Co-Operative Association, Winter 2006, <http://www.bcca.coop/pdfs/cp06.pdf>.

¹⁶ Dan Mazier, Elton Energy, danmazier@inetlink.ca, 204 763 4646.

¹⁷ Dave Therrien, Windcor, dave.therrien@windcor.com, www.windcor.com.

The group has also met with the Manitoba Sustainable Energy Association (ManSEA)¹⁸ and the staff of Manitoba's Ministry of Science, Technology, Energy, and Mines.¹⁹

Elton Energy is in the process of forming a cooperative. Membership is \$10. They are awaiting their formative meeting to approve the coop's by laws. Their original target was to install an anemometer in the spring of 2006. That target was missed and the group is still determining the details of wind resource assessment one year later.

The group has received input from outside the community in the form of advice from one of Minnesota's C-BED (Community-Based Energy Development) advocates,²⁰ from ManSEA, and from Wincor.

As of March, 2007, the municipal council was considering investing in its own wind resource assessment as part of Elton Energy's project.

Three high voltage lines traverse the area serving the nearby Brandon power station.

ManSEA has been active for three to four years. It's mission is to foster community renewable energy development. Though most interest is in wind, there is significant interest in on-farm biogas from the large concentrated animal feeding operations in the province.

Manitoba Hydro has issued or will soon issue a 300 MW call for tender.

The provincial government has openly discussed an additional 50 MW set aside for "community" wind for at least two years, though no formal action has yet taken place. Manitoba's Ministry of Science, Technology, Energy, and Mines anticipates that the 50 MW will be set aside for connection at distribution voltages. It's now likely no action will be taken until after the election.

Staff at the Ministry of Science, Technology, Energy, and Mines has participated in pricing workshops for Ontario's Standard Offer Program, and has met privately with the architects of the Ontario program. Further, the architects of the Ontario program have met privately with senior political figures within the provincial government.²¹

¹⁸ Les Routledge, Manitoba Sustainable Energy Association, lesppg@mts.net, 204 721 0439.

¹⁹ Rick Halas, Manitoba Ministry of Science, Technology, Energy, and Mines, rhalas@gov.mb.ca, 204 945 4004.

²⁰ Laurence LaFond, lafond@peak.org, <http://www.c-bed.org/>.

²¹ This includes the author of this report and Bernard Chabot, ADEME, bernard.chabot@ademe.fr, 33 4 93 95 79 14.

Despite the frequent contact between Manitoba and Ontario, the interest of rural landowners, and the apparent willingness of the government to take action, none has been taken and Manitoba Hydro continues to move down a traditional path that is closed to community projects.

There is a pervasive sense that traditional companies have all the development experience and that development is beyond the skill or financial ability of local communities. This attitude may be difficult to overcome. There may be a role for existing cooperatives in educating members and other rural landowners on various aspects of commercial wind development and possibly negotiating better land leases for landowners with commercial developers.²²

New Brunswick

There are currently no wind projects operating in New Brunswick. However, there are a number of groups trying to move community wind projects forward. Some of these are in Anglophone New Brunswick and some in Francophone New Brunswick. In addition, there are a number of commercial projects responding to New Brunswick Power's call for tender.

Possibly the oldest attempt at building a cooperative project is that on the Ile Lamèque on the Baie des Chaleurs. Begun in 1999 the Coopérative d'énergie renouvelable de Lamèque is developing a project on the Acadian peninsula.²³ They have a reservation with Natural Resources Canada for the Wind Power Production Incentive of 18 MW.²⁴

The local committee in Lamèque includes the Consortium Eolien Lamèque Miscou, Mouvement coopératif de l'Île , Société coopérative de Lamèque Itée, l'Association des pêcheurs de l'Île Itée, Hélimax énergie, l'Université de Moncton, the municipality of Lamèque and the Caisse populaire of Lamèque.²⁵

Eolien Lamèque Miscou has raised nearly \$170,000 for a feasibility study from Natural Resources Canada, New Brunswick Power, Coop Atlantique, and other sources in the community.²⁶

The cooperative venture is working with Helimax Energie of Montreal. Unlike other wind resource assessment services in Canada, Helimax will also take a development position.

²² Vera Goussaert, Manitoba Cooperative Association, vera@manitoba.coop, 204 989 5930, March 19, 2007.

²³ Peter Hough, Canadian Workers Co-operatives Federation, peter.cwcf@xcountry.tv, 902-678-0473, March 19, 2007.

²⁴ See http://www.canren.gc.ca/programs/index_f.asp?Cald=107&Pgld=711.

²⁵ See http://www.nbpower.com/en/corporate/media/press/lameque_wind_20010627.pdf.

²⁶ Paul Lanteigne, Lamèque , northeast, food coop, lameque-mgr@coopatlantic.ca, 506 344 2206, http://www.afmnb.org/doc_2005/eolien.ppt.

It's unclear where the project is in the development process.

Eos Eco Energy is developing a community wind venture in the Tantrammarsh area on the shores of the Bay of Fundy near the border with Nova Scotia.²⁷

Community Energy Cooperative was formed in 2005 as a loosely knit group with few resources. Nevertheless, participants are continuing to try and remove some of the many obstacles to community wind in New Brunswick²⁸

The Renew Coop maintains a web page but appears to be currently inactive. Their web site reports that there were some problems with their securities registration and there are no postings since mid summer 2006.²⁹

The Fort Folly First Nation near Moncton is exploring a project with commercial developer SkyPower and American community activists Community Energy.³⁰

The Falls Brook Centre has been supporting a community wind model in the Knoewlesville area since 2005. The Centre also posts an informative web page on community wind activities in New Brunswick.³¹

As with all other provinces, the principle obstacle has been the absence of power purchase agreements or contracts with New Brunswick Power. Similarly, like other provinces, proponents feel it's necessary to join forces with commercial developers to move their projects forward.

There has been effectively no movement by the new government on renewable energy since the recent election.

The Conservation Council of New Brunswick has begun to take a leading role in formulating a campaign for a new renewable energy policy in New Brunswick. The Council is weighing a campaign for an electricity feed law like that in Ontario.³²

Newfoundland

²⁷ Eric Tusz-King, Eos Eco Energy, tusz@nb.sympatico.ca, 506 536 0597, March 24, 2007.

²⁸ John Simon, Community Energy Cooperative, jcpsimon@yahoo.com, 506 645 1448 mobile, March 20, 2007.

²⁹ See <http://www.renewcoop.net/>.

³⁰ Citizens Energy is known for its executive director, Joe Kennedy, <http://www.citizensenergy.com/>.

³¹ Jean Arnold, Falls Brook Centre, ja@fallsbrookcentre.ca, 506 375 8143, http://www.fallsbrookcentre.ca/technology/community_wind.htm.

³² Toby Couture, Conservation Council of New Brunswick, energy@conservationcouncil.ca, 506 458 0167.

There is no activity at this time.³³

Nova Scotia

There are about 50 MW of wind projects operating in Nova Scotia. The largest is a commercial wind plant of 31 MW in the south of the province at Pubnico Point. Another small 5.6 MW plant comprising two projects is operating near Sydney on Cape Breton Island. The remainder of the wind capacity in Nova Scotia is found in single turbines or small clusters. This form of development contrasts sharply with that found elsewhere in Canada where large multi-megawatt projects are more the norm.

The largest number of single turbines has been installed by Renewable Energy Services as part of its Scotian Windfields' community wind development.³⁴ Renewable Energy Services has developed eight projects representing a total of 6.5 MW. Most use Enercon's E48, the first application of the turbine in North America.

Scotian Windfields incorporates a company in each of the province's development regions to localize the project. They form a limited liability company and managerial control is determined by the number of shares owned. However, Scotian Windfields limits any one shareholder to no more than 20% of the equity.

Scotian Windfields business model is designed to take advantage of the province's economic development tax credit. To qualify for the subsidy the project must have a minimum level of community involvement. Scotian Windfields target is 40% of project equity from local participants. The board of directors of each project may include local participants.

The need to include equity investment by the local community may explain the reason for selecting a medium-size (800 kW) turbine for many of their projects. A turbine this size will cost about \$1.6 million and it may be easier to raise the needed equity in the small communities where the turbine is located than if a larger wind turbine was used. Nevertheless, a turbine of this size class (E48) should produce more than 2 million kilowatt-hours per year at a good site in Nova Scotia.

These projects are not cooperatives, managerial control is not necessarily in the hands of local investors, and the projects are not necessarily initiated by the local community. However, there is local investment and involvement.

³³ Glen Fitzpatrick, Newfoundland/Labrador Fed of Co-operatives gfitz@nlfc.nf.ca, 709 726 9431, March 20, 2007.

³⁴ Brian Watling, Scotian Wind Fields, bwatling@scotianwindfields.org, 902 798 5085, www.scotianwindfields.org, March 20, 2007.

Scotian Windfields projects and those of several others obtained contracts to sell their power for a fixed price (\$0.06/kWh) from a small Nova Scotia Power program. Each project was limited to 2 MW. The larger projects won contracts after Nova Scotia Power issued a call for tender.

Island Wind Power Investment Co-op would also like to develop a project, however, the cooperative is not moving forward because of a lack of contracts with Nova Scotia Power. Island Wind is discussing a new policy approach with the Nova Scotia Co-operative Council³⁵

Nova Scotia Power has issued another 130 MW call for tender with the “opportunity” for “up to” 30 MW from small projects, depending upon price. Nova Scotia Power selects projects principally on price and the Nova Scotia Utility Review Board’s mandate specifies that they approve or reject Nova Scotia Power’s requests to place projects in the rate base solely on the criteria of lowest cost power.

The Nova Scotia Co-operative Council along with the Ecology Action Centre has taken the lead in pushing for a new renewable energy policy in Nova Scotia. Both are campaigning for introduction of an electricity feed law similar to that in Ontario.

The Co-operative Council’s Renewable Energy Initiative issued a report in early 2007 calling for a feed-in tariff, the first formal study of its kind in Atlantic Canada.³⁶ The Council coaxed the government into forming a rare multi-departmental working group to consider new renewable energy policy for the province. The working group is comprised of senior staff from the ministries of energy, environment, economic development, and agriculture.

As elsewhere in Canada, there is little likelihood that a wind cooperative will be developed without ready access to power purchase agreements at favorable tariffs. As long as Nova Scotia Power continues to award contracts through a call for tender there will be few if any cooperative wind projects.

There is no concrete action toward a change in policy at this time.

Ontario

There were 400 MW of wind plants operating in Ontario at the end of 2006. Much of that capacity was installed in 2005-2006 through provincial call for tenders.

The only cooperatively owned wind turbine currently operating in Canada is installed in the city of Toronto. Several groups and cooperatives have attempted

³⁵ Bob Williams, Nova Scotia Co-operative Council, bobwill@eastlink.ca, 902 896 7293, www.nsko-opcouncil.ca, March 20, 2007.

³⁶ See http://www.nsko-opcouncil.ca/Publications/renewable_energy_policy_2007.pdf.

or are attempting to develop community wind projects in Ontario. Most are members of the Ontario Sustainable Energy Association (OSEA).

TREC-WindShare

The Toronto Renewable Energy Co-operative (TREC) was formed in 1998 by members of the North Toronto Green Community. These urban renewable energy advocates sought to replicate the European model of community ownership within the city of Toronto. They formed a partnership with Toronto Hydro, then a municipal utility, to develop a two-turbine project somewhere on the city's waterfront.

TREC created the WindShare cooperative to raise the capital for building the project. WindShare met its target within eight months of issuing its prospectus. One wind turbine was installed at Exhibition Place during the winter of 2002-2003. The planned second turbine has not been installed for a host of reasons.

Toronto Hydro owns one-half of the WindShare turbine, the other half is owned cooperatively by 425 investors in Toronto.³⁷

Though a single 750 kW turbine is a small project by today's standards, it represented a five-year struggle to overcome numerous regulatory obstacles. At the time of its installation, the WindShare turbine was one of only three wind turbines operating in Ontario at the time. One wind turbine had been installed by Ontario Power Generation at its Pickering nuclear station, and another was installed by a private developer, Sky Generation, on the Bruce Peninsula.

WindShare's ExPlace turbine was also the first wind turbine installed in an urban setting in North America. TREC and WindShare were true pioneers of not only of a renewable energy cooperative in North America, but of wind energy in Ontario.

The TREC WindShare project was predicated on deregulation of the Ontario electricity market and the ability of WindShare members to "net bill" their share of generation with Toronto Hydro. This never took place. After the market was "deregulated", prices began to rise rapidly, the then government panicked and placed a price cap on all generation. This move effectively killed any attempt to sell power from the turbine. Since that time the project has been "orphaned" in Ontario's electricity system and electricity is being sold to Toronto Hydro on a private, unwritten, bi-lateral agreement.

WindShare's single turbine continues to generate about one million kWh per year and Toronto Hydro pays for this generation. Both parties are trying to resolve the "orphan" issue and obtain a contract with the Ontario Power Authority to sell power under Ontario's new Standard Offer Program. This program was in part

³⁷ See <http://www.wind-works.org/articles/TorontosWindShareCoop.html> for photos of the 2006 annual general membership meeting.

created to resolve the orphan wind turbine problem and put WindShare's turbine and the other privately-owned turbines in the province on a firmer contractual footing.

The TREC WindShare turbine was locally initiated, locally developed, and is cooperatively managed.

Principals in TREC sought to replicate the WindShare cooperatively model across the province, forming OSEA³⁸

TREC remains active and for several years has been developing a follow on project dubbed Lakewind.³⁹ This project will incorporate the second turbine that was never installed in the original WindShare project. TREC has formed a partnership with Countryside Energy Co-operative of Milverton to jointly develop Lakewind.⁴⁰

Countryside Energy Co-operative

Countryside Energy Co-operative has completed the wind resource assessments, obtained control of a site near Lake Huron, initial development financing, and was ready to issue shares. However, Lakewind ran into major obstacles.

As with all community wind projects in Ontario, Countryside-TREC was awaiting implementation of the province's Standard Offer Program. With a contract to sell power in hand, the cooperative could make a final determination of the project's economics. Unfortunately, when the province announced implementation of the Standard Offer program it prohibited all projects in a transmission "constrained" zone around the Bruce nuclear plant. This included the Lakewind site near Bervie.⁴¹

To make matters even more difficult, Ontario's Financial Services Corporation (FSCO) rejected Countryside-TREC's offering document, indefinitely delaying all other wind coop offering documents. FSCO questioned whether wind coops meet the definition of cooperatives, that is, by buying or selling for member's direct benefit.

FSCO, the province, and Countryside have sought to resolve the issue. One proposed solution is to link the purchaser of shares in a coop to their domestic

³⁸ See <http://www.ontario-sea.org/>.

³⁹ See <http://www.trec.on.ca/projects/lakewind.html>, and http://www.windshare.ca/about/sub_one.html.

⁴⁰ See <http://www.countrysideenergyco-op.ca/>.

⁴¹ The Bervie project is connecting to a line with 24 MW of capacity available according to Hydro One, the local distribution company, nevertheless the Ontario Power Authority placed the area in the orange constrained zone.

electricity consumption. Shares in the coop would then be sold only up to the purchaser's total consumption. Countryside has yet to resubmit its offering documents with this revision. Thus, FSCO has yet to rule.

Linking share purchase to electricity consumption is a less than ideal solution. This would effectively limit the amount of shares each family could own, forcing the cooperative to expand its marketing to capture sufficient investors.

Countryside is working on a limited budget, hoping for a resolution of both issues (OPA's constrained zone, and FSCO) in April. There is positive support in the community and within the government, but good intent is not enough and both issues will have to be resolved soon.

Countryside's site at Bervie could support up to 26 MW.

Lakewind will be cooperatively managed, but for TREC WindShare investors in Toronto the project will not be local as the site is near Kincardine on the shore of Lake Huron.

Positive Power Co-op

Positive Power Co-op in Hamilton has been pursuing a coop wind project nearly as long as WindShare in Toronto. They have completed their wind resource assessment of a site for a single turbine on a drumlin atop the Niagara Escarpment. The drumlin is near Flamborough between Toronto and Hamilton on the north shore of Lake Ontario. The average annual wind speed of 6.1 m/s at 50m height is insufficient to develop a profitable project at \$0.11/kWh that Ontario's Standard Offer Program would pay.

Positive Power is also pursuing a multiple turbine project on the north shore of Lake Erie southwest of Dunnville.⁴² The project's initial phase would comprise three turbines, but the site has the capacity for up to 9 turbines.

While Positive Power's Flamborough project would qualify as a locally initiated, and locally developed project, this isn't so with the Lake Erie site which is much further afield from Positive Power's base in Hamilton. The Lake Erie project would be developed and managed as a cooperative.

Windfall Ecology Center

Windfall Ecology Center's project on Georgina Island could become the first community wind development in Canada by a First Nation.⁴³ The wind resource

⁴² See <http://www.positivepowerco-op.com/>.

⁴³ See <http://www.windfallcentre.ca/default/index.php?section=RenewableEnergy&page=Overview&vrs=>

assessment is underway on the island and Windfall has begun the environmental review.

TREC North

The Renewable Energy Co-operative North has begun the wind resource assessment for its Temagami Wind Energy Initiative.⁴⁴ The project is intended to generate electricity for the village of Temagami in the north of the province. TREC North hopes to build the 10 MW project in 2008.

TREC North's Temagami project is locally initiated and would be locally developed as well as cooperatively managed.

Hearthmakers

Located in Kingston at the eastern end of Lake Ontario, Hearthmakers has pursued two projects: its Greater Kingston Trade Winds Project, and single turbine installation for St. Lawrence College.⁴⁵ Both projects have been stymied by the absence of power purchase agreements and numerous permitting hurdles. While the Standard Offer Program has eliminated one barrier, several remain and the projects are dormant.

Francophone Farmers in Eastern Ontario

Francophone farmers in the vicinity of St. Isidore are considering a community wind project. Farmers in the area were approached by a commercial wind developer. Affiliated with a successful cheese coop, some 40-50 farmers banded together to secure a better deal with the commercial developer. They came in contact with Val-Éo's Patrick Côté at a meeting in Quebec and brought him to a community meeting in Ontario.⁴⁶ Since then they have chosen to follow the Val-Éo model and present a united front in determining their wind resource. Côté says that the farmers are also affiliated with l'Union des cultivateurs franco-ontariens.⁴⁷

Several other community wind projects have been proposed.

- Power Up Renewable Energy Co-operative⁴⁸
- Windy Hills Caledon

OSEA

⁴⁴ See <http://www.trecnorth.ca/>.

⁴⁵ See <http://www.hearthmakers.org/tradewinds/>.

⁴⁶ Patrick Côté, Val-Éo, patrick.cote@hec.ca, 418 343 3756, March 26, 2007.

⁴⁷ See <http://www.lavoieagricole.ca/index.cfm>.

⁴⁸ See <http://powerupenergy.ca/>.

The Ontario Sustainable Energy Association is an umbrella organization for groups across the province developing community renewable energy projects. OSEA has been an effective advocate for the community renewable concept as it seeks to adapt the European method of small project development to Ontario. OSEA has promoted the cooperative model.

OSEA's ARTs Campaign

OSEA identified the ability to get contracts for selling the electricity generated by a wind cooperative as the major obstacle to community wind development. As elsewhere in Canada, the province used call for tenders to award contracts for new generation. The cost, complexity, and bonding required effectively excluded small community projects.

To remedy the situation, OSEA launched a campaign for Advanced Renewable Tariffs (ARTs) in 2004. OSEA's goals for its ARTs campaign were to

- Encourage broad participation,
- Eliminate barriers to distributed renewable generation,
- Provide a stable market for renewable generation,
- Stimulate new investment in renewable generation,
- Provide a rigorous pricing model for setting the tariffs,
- Create a program applicable to all renewable technologies, and
- Provide a simple, streamlined, and cost-effective application process.

OSEA's proposals were based on successful policies in Germany, France, and Spain. Successful programs must

- Be simple, comprehensible, and transparent,
- Provide simplified interconnection,
- Provide sufficient price per kilowatt-hour to drive development,
- Provide contract length sufficient to reward investment, and
- Provide tariffs differentiated by technology, size, and resource intensity.

The Ontario Ministry of Energy contracted OSEA to prepare a report on a policy of "Standard Offer Contracts", the ministry's description of renewable tariffs. OSEA's issued its report in the spring of 2006.

The Ministry of Energy asked the Ontario Power Authority (OPA) and the Ontario Energy Board (OEB) to develop a policy in response to OSEA's report. OPA and OEB adopted some of OSEA's suggestions, but not all. OPA and OEB reported that their guiding principles in designing the program were that the program should

- Be simple,
- Remove barriers to renewable generation,

- Balance renewable generation targets with value to ratepayers, and
- Build on the efforts of OSEA.

In the spring of 2006, Premier Dalton McGuinty launched Ontario's Standard Offer Program. In mid November 2006, OPA began accepting applications for contracts under the program.

Documents on OSEA's campaign and OPA's implementation of the Minister of Energy's directive can be seen www.wind-works.org.⁴⁹

OPA maintains an official web site for documents pertaining to the Standard Offer Program at www.powerauthority.on.ca/sop/.⁵⁰

As of March 2007, no cooperative or community wind project, or any OSEA member had received a contract under the program.

OSEA's Community Power Fund

OSEA also identified another significant barrier to community wind development: funding for pre-feasibility, wind resource assessment, and coop formation. Under Ontario law, cooperatives could not issue an offering document without approval from FSCO. Approval is predicated on a realistic business plan. No group could produce a business plan without a pre-feasibility study and a wind resource assessment. TREC, Positive Power, and Countryside all sought up-front financing through provincial and federal grants. However, these grant sources are insufficient for the number of groups wanting to develop projects in Ontario.

OSEA sought creation of a special-purpose fund for supporting the early phases of wind coop development. Ontario's 2007 budget includes \$3 million for OSEA's Community Power Fund. The fund is intended to provide grants for the substantial up-front development costs of community projects. OSEA will seek an additional \$7 million from other sources to ultimately create an expanded revolving loan fund.

Substantial Barriers Remain

Despite the launch of the most progressive renewable energy policy in North America in two decades and the ready availability of contracts at prices better than anywhere else on the continent, community wind developers have been thwarted. Those in the "orange" constrained zone have become the victims of an arbitrary and capricious act by the Ontario Power Authority. While nominally

⁴⁹ See <http://www.wind-works.org/FeedLaws/Canada/OntarioandtheCampaignforAdvancedRenewableTariffs.html>.

⁵⁰ See <http://www.powerauthority.on.ca/sop/>.

“removing” barriers, OPA created a major new barrier that could potentially sabotage the success of Ontario’s Standard Offer Program.

Further, wind tariffs under the Standard Offer Program are marginal. While adequate at windy sites on the shore of Lake Huron, they are inadequate elsewhere. Turbine prices have increased 20% since OPA began discussing implementation of the program.

The best (windiest) sites have already been leased to private developers, often for bidding into the province’s call for tenders. Thus, only the less windy sites are typically available to community groups. Moreover, locally initiated projects are geographically rooted. Unlike a private commercial developer, they can’t move to a windier area to build their project. Locally initiated projects either have enough wind for profitable development under the OPA price or they don’t.

OSEA’s original proposal included wind tariffs differentiated by the wind resource. That is, the price or tariff paid was dependent on the wind at the site. Wind turbines at less windy interior sites, those typically being developed as community wind projects, would be paid a higher price than those turbines located at windy sites on the shores of the Great Lakes.

Long Lead Times

Projects may take two years or more to develop at best. Though power purchase contracts became available in November 2006, it will be at least another year before a community wind project, if any, is built. Two community wind projects (Countryside-TREC’s Lakewind, and Positive Power’s Lake Erie site) have the necessary wind resource data but are stymied by FSCO. The remainder of Ontario’s community wind projects are currently collecting wind resource data or have become quiescent. One, Windfall Ecology Centre, has begun its environmental assessment.

Though there are more groups organizing cooperative or community wind projects in Ontario than any other province, only one wind turbine has been installed to date.

Prince Edward Island

There are two wind plants totaling 40 MW operating on Prince Edward Island: North Cape and Eastern Kings. Together they generate 12.5% of the island’s electricity.

There are no wind cooperatives, though there is a high level of interest.⁵¹

⁵¹ David Daughton, Canadian Worker Co-operative Federation, lobie@isn.net, 902 628 6628, March 21, 2007.

PEI Energy Corporation developed, installed, and owns the Eastern Kings Wind Farm, a project of ten Vestas V90 turbines.⁵² The Energy Corporation estimates the 30 MW project will produce 7.5% of PEI's electricity supply.⁵³ PEI Energy Corporation is a state enterprise (Crown corporation) and though owned by the province, the citizens of the island have only indirect control over its actions.

The province is selling islanders \$20 million in PEI Energy Saving Bonds to partially pay for the project.⁵⁴ The bond sale is specifically aimed at giving islanders a direct financial stake in the project. The bond represents about one-third of the total cost of such a project. PEI is working with local credit coops to sell the bonds.

Though there are no overt obstacles on cooperative wind development on the island, the government has not been responsive. Minister of Energy Jamie Ballem has preferred development through PEI Energy Corporation.

PEI's Energy Act requires utilities to acquire at least 15% of their electrical energy from renewables by 2010; allows for net metering for small renewable energy systems, and offers a guaranteed feed-in tariff for community, wind cooperative and large systems. However, the act restricts large-scale wind developments to designated development areas.

PEI implemented its program in 2005 and now pays a simple tariff of \$0.0775/kWh for renewable sources of generation. Contracts are for a period of 20 years and the tariff increases with 26% of inflation.

Minister Ballem has also proposed a novel (for North America) royalty payment scheme to PEI landowners. Landowners with turbines receive 70% of royalties per turbine, those within 100 meters receive 20% of royalties per turbine, and those within 300 meters receive 10%. The land lease royalty is low, only 2.5% of gross revenue, in comparison to that common in Europe.

At the time it was introduced, PEI's Energy Act was called the most progressive renewable energy policy in North America.⁵⁵

Saskatchewan

There is no activity at this time.⁵⁶

⁵² Wayne MacQuarrie, dwmacquarrie@gov.pe.ca, 902 894 0289, www.peienergycorporation.ca.

⁵³ Eastern Kings Wind Farm Project, <http://www.gov.pe.ca/envengfor/index.php3?number=1012553&lang=E>.

⁵⁴ Sales Strong for PEI Energy Saving Bonds, <http://www.gov.pe.ca/news/getrelease.php3?number=5068>.

⁵⁵ See <http://www.wind-works.org/FeedLaws/Canada/CanadaList.html#Prince%20Edward%20Island>.

⁵⁶ Warren Crossman, Saskatchewan Co-operative Association, warren.crossman@sask.coop, 306 244 3702, March 19, 2007.

II. Federal and Provincial Regulatory Policy

There is little direct impact by the federal government on wind coop development. The exception is the federal renewable energy subsidy.

Federal WPPI

While more egalitarian than the US's Production Tax Credit, Canada's Wind Power Production Incentive (WPPI) is an ineffective incentive and borders on mere tokenism.⁵⁷

Provincial Policy

Energy and electric utility policy is the purview of the provinces as is administering Crown lands. Provinces also regulate corporate governance and thus, determined the conditions under which cooperatives operate.

Provincial policy determines who receives contracts to sell their electricity and often determines at what price the electricity is sold. Past practice has been to award contracts in response to a call for tender or Requests for Proposals (RFPs).

Provincial Call for Tenders

As long as provinces and crown corporations rely on calls for tender as a means for awarding contracts, few true wind cooperatives or community wind projects will be built in Canada. As a rule cooperative wind and community wind projects will be smaller than their commercial counterparts and as a result will incur diseconomies of scale, thus, putting them at a competitive disadvantage to larger projects.

Standard Contracts—Not Standard Prices

Without the ready availability of standard contracts open to all participants (farmers, homeowners, First Nations, cooperatives, and other businesses), there can be no development of true wind cooperatives in any province.

⁵⁷ The Harper government has renamed the incentive, but the program is otherwise the same. One limit on the program is the modest subsidy (\$0.0085/kWh), the second is the limit placed on the total amount of the subsidy that would be paid out during the ten-year period that the subsidy is paid. This limit effectively places a cap on the program's usefulness.

Currently only Ontario and PEI offer standard contracts. Standard contracts are necessary but alone insufficient for large-scale development of community wind projects.

The wind resource varies geographically and because the power in the wind is a cubic function of wind speed small changes in wind speed from one place to another greatly influences the tariff necessary for profitable development. To enable development opportunities across a geographic area, the price or tariff for wind energy must vary. No “standard” price or tariff will result in widespread geographic dispersal of wind energy unless the tariff is unnecessarily high. This is particularly true in a geographically diverse province such as Ontario.

Both Ontario and PEI only offer one “standard” wind tariff. The Ontario tariff is insufficient for profitable wind development in the interior of southern Ontario and on the north shore of Lake Ontario.

Other Barriers

In conversations with community and coop groups across Canada, it appears there are several psychological barriers to development of cooperative wind projects. These are a

- Pervasive belief that communities cannot develop projects on their own either because they lack the skills or investment capital needed,
- Ready willingness to accept partial rights to commercial projects within their own communities,
- Lack of vision of how communities can develop their own projects,
- Lack of thorough research on how other communities have developed their own projects despite the abundance of information on the web,
- Lack of understanding of the fundamentals of project development and the critical criteria that makes a project work, and
- Lack of understanding of the fundamentals of wind energy.

While similar barriers may have existed at one time in Denmark and Germany, they certainly don't exist today.

German farmers are no different than Canadian farmers. They are businesspeople who live and work on the land. They are not wind developers. The difference is that German farmers know they can hire the skills they need to build a project because their neighbors have done so.

German renewable energy and farm magazines are replete with ads for such services. There are firms in Germany that specialize in development of small

projects for a fee. Similarly there are firms that specialize in developing community wind projects, again for a fee.⁵⁸

III. Canadian Community Wind--What's Needed

There are three essential elements for community wind to reach its potential in Canada:

- The right to connect to the electrical grid without undue cost,
- A legal obligation for the priority purchase of wind energy by electric utilities,
- A guaranteed fair price for that energy, differentiated by the resource.

The single most effective action to advance the community wind agenda in Canada is to immediately launch a campaign implementing these provisions in all provinces—a campaign to implement Advanced Renewable Tariffs nationwide.⁵⁹

Expanded Definition of a Cooperative

In some provinces, such as Ontario, it will be necessary to introduce legislation expanding the definition of cooperatives to include renewable energy generation.

Revolving Loan Fund

There may be a role for a federal loan fund targeted specifically at renewable energy cooperatives. The fund could not only provide up-front development grants, but also low-interest project development loans, possibly funneled through cooperative development banks.

Educational Campaign

There is an immediate nationwide need for educational materials and expertise providing technical, legal, and general information on developing renewable energy cooperatives. This information should also include advice for landowners in getting the best deal possible from commercial developers if they choose not use the cooperative or community development model. Materials must be presented in both French and English. There are unique materials in each language, but often not in both.⁶⁰

⁵⁸ See Josef Pesch's Fesa, <http://www.wind-works.org/articles/JosefPeschStromRebel.html>.

⁵⁹ The timing may be right to do so. ARTs or at least "Standard Offer Contracts" are on the table in British Columbia, Saskatchewan, Manitoba, and Quebec.

⁶⁰ OSEA has produced a valuable report, Ontario Landowners Guide to Wind Energy, and accompanying spreadsheet, however, the document is only available in English, <http://www.wind-works.org/articles/OSEA-Landowners-2005-r1-v3.pdf>. Similarly, Val-Éo's documents are only available in French.

Provincial Limits to Land Leases

Commercial wind developers realize the single most important asset of a wind project is access to the wind resource—the land lease. Both in the USA and Canada, private developers have been scouring promising regions and offering landowners “options” to measure their wind resource. These “options” often include the terms of an eventual long-term land lease for use of the land to develop a wind project. Long-term is the operative word. Some leases extend for more than 42 years in Ontario.

Options and their attendant land leases have value in and of themselves. It is not uncommon for the negotiator of the option and land lease to “flip” ownership of the lease to another party. Some have specialized in “flipping” leases. Thus the landowner may have negotiated in good faith with one party, placing their trust in that party, only to find that a few months later their contract is with another firm entirely.

Abuses by developers in Minnesota have led the state legislature to pass a bill that includes a provision for limiting “option” agreements to no more than five years. If no development has taken place in that time, the option becomes null and void.⁶¹

Provinces or the federal parliament should consider similar legislative remedies in Canada.

The Val-Éo Model

Patrick Côté of Val-Éo has identified a powerful tool for landowners in taking control of their wind resource. Just as commercial wind developers build their portfolios of potential projects by gaining site access, so to can landowners. Neighbors can pool their land resources into a cooperative and with a modest collective investment conduct their own wind resource assessment. In doing so, landowners control the land, preventing others from gaining access to their wind resource, and they add value to their resource by measuring the wind themselves. Subsequently, the landowner cooperative can choose to develop a project internally or lease the right to do so to others. In either case the landowners are in control.

The Val-Éo model is not unlike that followed by the Peace River Cooperative in Dawson Creek. Peace River formed a cooperative, gained site control on Crown Land, and built on the wind measurements already underway by BC Hydro. Peace River could negotiate with wind developers from a position of strength.

⁶¹ Revisions to Minnesota's C-BED legislation:
http://ros.leg.mn/bin/getbill.php?number=HF2253&session=ls85&version=list&session_number=0&session_year=2007.

The Val-Éo model may be helpful to many rural landowners across Canada. The French language documentation and reports should be translated into English so all Canadians can learn how to use the model effectively.

National Campaign

To summarize, there's an immediate need for a national campaign to implement Advanced Renewable Tariffs in each province and to educate Canadians of the prospects and pitfalls of community renewable energy development. The Ontario Sustainable Energy Association could conduct such a campaign. By default, OSEA is performing that role today. However, there may be latent resentment of an "Ontario" organization and especially that of one in Toronto offering advice and counsel to other provinces. There may be other nationwide organizations that could fulfill this role, including the Canadian Co-operative Association and the Canadian Renewable Energy Alliance.

-End-