Barriers to

Community Owned Renewable Energy

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Elton Energy Cooperative
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Introduction

Elton Energy Cooperative (EEC) was formed in June of 2006 in order to support the development of community owned renewable energy projects. EEC is located in the Rural Municipality (RM) of Elton, 8 miles North of Brandon, Manitoba. Over the past seven years, EEC has developed a province-wide model that focuses on the concept of community owned renewable energy. Community owned renewable energy, also called community power, is a way to allow Manitobans to make an investment with favourable returns, while supporting local communities and helping the environment.

The central concept of community power is that the ownership of renewable energy projects, such as wind farms and solar photovoltaic projects that feed power into the electrical grid, is to be owned by ordinary Manitoba residents. This provides a way for Manitobans to invest directly in local infrastructure that benefits Manitobans, thus reducing the economic leakage of renewable energy profits leaving the province.

The model that EEC developed is based on lessons learned regarding community power programs in other jurisdictions, including Ontario, Nova Scotia and Minnesota. It is designed to encourage cooperation rather than competition among communities and allows anyone in the province to participate. Additional elements and further details are documented in the 30-page Community Power Investment Model located on the EEC web site, http://www.eltonenergy.org.

The cooperative was chosen as EEC’s organizing structure for several reasons:

- The definition of a cooperative, including its “one member, one vote” structure, is consistent with the results that we are intending to achieve. The cooperative model differs from a conventional corporation model in that a conventional corporation bases control decisions on the relative amount of equity controlled by the various investors (“one share, one vote”).
- Cooperatives can issue investment shares based on an offering statement rather than having to issue shares based on a much more expensive prospectus (a prospectus costs tens of thousands of dollars to get approved through the Securities Commission, and is required for conventional stock market equity share sales by a conventional corporation).
- Cooperatives are allowed to sell investment shares through a person-to-person marketing campaign, and don’t require the use of a stock broker. This approach to selling shares reduces transaction costs and is consistent with the person-to-person, local focus of community power.

The EEC model is designed to leverage the features of a share capital cooperative, in which cooperative members are asked to provide investment dollars to invest in a community need (electricity) and receive a return on the investment. The model is consistent with the seven cooperative values of voluntary and open membership, democratic member control, member economic participation, autonomy and independence, education, training and information dissemination, and cooperation and concern for community.
EEC intends to build a 4.6 MW wind project in the RM of Elton. The project will consist of two turbines, each 2.3 MW. End-to-end aspects of the model will be tested with this initial project, including the sale of investment shares to the public and management of the operations and investment over time. The project has been purposely designed as a small-scale starting point and a base to build from in order to allow the government, Manitoba Hydro and Manitobans a transparent review of the model’s costs and benefits. The complete system for managing community-based investors from across the province will be included in the project. To date, EEC has accomplished the following:

- Completed a 2-year wind study that describes a strong wind regime.  
- Engaged appropriate technical resources for purchase of appropriate turbines for the wind regime, secured the appropriate environmental and geologic study resources, and ensured that we have appropriate financial, legal and technical expertise to minimize the risk of the project to our investors.  
- Completed the initial interconnect survey. There is a distribution system substation near the proposed site that is capable of accepting the power. While a full interconnection study will be required, initial indications from Manitoba Hydro are that the interconnection is not an issue at this location for this size project.  
- Secured strong community support for our project, both locally and provincially. We have met with the community on numerous occasions and we have been transparent about the project details and site information. The EEC board of directors consists of local community members.  
- Ensured that our project directly benefit residents of Manitoba. Our project creates skills, jobs, and community cohesion. It provides a mechanism for individuals to secure a return on investment for renewable energy projects no matter where they live in the province. It keeps investment returns in the provincial economy in order to minimize economic leakage out of the province.  
- Participated in development of an investor management tool. We worked with the Toronto Renewable Energy Co-operative (TREC) to develop a full-featured, back-office investor management tool that addresses all aspects of financial transactions for community owned projects, from escrow services to tax reporting and member communications. The availability of such a service is an important component of a community power program, because it addresses the requirements of managing a large number of small investors in a cost-efficient manner. This service is now in production, and was designed to be made available to EEC to manage its investors at the time our project is built.

This paper details the four key barriers we have encountered that prevent EEC from building the project. Solutions to the four outlined barriers will be researched in the second year of our research project.

**Community Owned Renewable Energy in Manitoba**

A community owned renewable energy program would provide a wide range of economic, environmental and social benefits for the province, including increased direct investment in Manitoba’s rural communities, increased source of capital and increased tax revenue from the infrastructure that is built.
The Opportunity

Community owned renewable energy projects help Manitoba Hydro and the Government of Manitoba support local economic development. Two studies in particular document a three-fold increase in economic development benefits of community power: (1) a 2004 US Government Accountability Office documented a three-fold increase in local economic development when comparing one 40 MW windfarm to 20 x 2 MW wind projects9 and (2) a study by Arne Kildegaard at the University of Minnesota at Morris titled “Ownership and Regional Economic Impact: The Case of Wind Development in Minnesota” also showed a three-fold increase in local economic development accruing to locally owned projects compared to projects that were owned by entities outside of the community.10

Increased Rural Investment

Farmers, other rural landowners, community groups, cooperatives, First Nations, and rural businesses and industry benefit from a steady supply of community owned contracts with sufficiently attractive prices that would drive investment in local communities.

Increased Sources of Capital

Community owned projects tap into local community capital to finance development. Whether it is equity provided by farmers, co-operatives or small businesses, or debt provided by local banks, credit unions and/or farm financing agencies, the pool of available capital for renewable energy is significantly expanded.

Increased Tax Revenue

Increased economic activity in rural areas generates incremental tax revenues. Tax revenues based on economic activity that avoids pollution or other negative environmental and/or social externalities provides important long-term stability to rural areas.

The Policy Context for Community Owned Renewable Energy

The community-based renewable energy sector did not participate in Manitoba Hydro’s 2007 300 MW renewable energy Request for Proposal (RFP).11 The RFP’s complex bidding process posed a significant barrier for farmers, community groups and others with community-focused renewable power projects interested in helping the province meet its renewable energy targets.12 Manitoba Hydro and the Government of Manitoba recognized this barrier by explicitly stating a desire to purchase 50 MW of power from community owned projects.

Additional renewable energy will be developed in Manitoba with or without a community power program; the larger economics and political climate assure this outcome.13 The more important question is “Who will benefit?”

By deploying a community power program that keeps Manitoba residential energy profits accruing to ordinary Manitoba residents, we add to our local prosperity and we create a secure economic future for our children.
Developing a community power program for all of Manitoba provides the opportunity for Manitoba Hydro and the Government of Manitoba to leverage non-hydro sources of renewable energy, particularly wind power, in order to create a sustainable future for Manitoba’s communities.

A program that supports community owned renewable pays long-term dividends to the residents of Manitoba and becomes a legacy for future generations. Wind energy, in particular, is highly scalable and efficiently harvests an untapped power source that results in economic development opportunity for rural areas.

**Project Methodology**

This research analysis builds on activities that have been occurring since 2007. We have been gathering input from communities and community leaders since this project was started in 2007.

**History**

In 2007, EEC first met with the CEO of Manitoba Hydro, Bob Brennan and his VP of Export, Ken Adams, to review EEC’s approach to community owned renewable energy and to get Manitoba Hydro’s feedback on the development of the model. Attendees indicated that to change the mandate of Manitoba Hydro, EEC would need to talk to the Government of Manitoba. EEC subsequently met with the Minister of Agriculture and Rural Initiatives (MAFRI) (Rosann Wowchuk) and key representatives from her staff. EEC also presented the model at Ag Days and secured public feedback. This presentation led to numerous follow-up presentations around the western part of the province.

During this time, EEC gained the support of the RM of Elton and the RM forwarded a resolution to the Southwest Region of the Association of Manitoba Municipalities (AMM) supporting the development of a province-wide community power program. This resolution was passed at the regional meeting and subsequently also passed at the provincial AGM (Annual General Meeting) of the AMM. Presentations were made and a resolution was passed at the Keystone Agricultural Producers (KAP) AGM to support the development of a community power program in the province. EEC also presented follow up meetings over the years to both AMM and KAP in order to allow these well-known organizations ample opportunity to provide feedback. EEC participated in community meetings in conjunction with ManSEA (Manitoba Sustainable Energy Association) in The Pas, Swan River, Manito and other rural communities.

EEC met with Minister Wowchuk a second time when she was the Finance Minister and the Minister responsible for Manitoba Hydro. That meeting included the Board Chair of Manitoba Hydro, Vic Schroeder, the CEO of Manitoba Hydro, Bob Brennan, Stan Struthers, who was Minister of MAFRI at the time, and Jim Crone, Director in Science, Technology, Energy and Mines (STEM). The intention behind this meeting was to bring Manitoba Hydro and the Government of Manitoba together to explore common ground.
The issue of Manitoba Hydro’s existing policy was raised and how it needs to be changed to accommodate a community development initiative like this.

Because of the community economic development benefits documented in the model, EEC initiated a meeting with the Minister of Housing and Community Development, Kerri Irvin-Ross. This meeting provided EEC with a better understanding of how this department could support the community economic development aspects of the initiative. EEC met again with Jim Crone, who was the Executive Director at Manitoba Innovation, Energy and Mines during this time as well to discuss how the program would impact current energy policy.

Understanding the requirements of Manitoba Hydro regional staff in Brandon, near the site of the proposed 5 MW project, and ensuring that Manitoba Hydro distribution staff was engaged throughout out the process has been a high priority for EEC. EEC met with Bob Graham, Energy Services Advisor at Manitoba Hydro’s Brandon office, and with his staff several times to gain an understanding of what Manitoba Hydro would require from EEC to allow connection of the project onto the distribution grid and the amount of power the project could put into the system at the suggested interconnection point.

EEC was also invited to present a description of the project to the Southwest group of Electrical Maintenance workers, in order to get input from the perspective of those who are working on the lines all year round and who expressed an interest in being informed about the project and how it would impact the system they work on.

Dan Mazier met with Dave Angus from the Winnipeg Chamber of Commerce to see if the concept of developing a province wide community power program would be something the Chamber’s Bold Initiative could support.

As recently as last year EEC met with the mayor of Brandon, Shari Decter Hirst, to engage in discussion about what a community power program would do for rural development in general and for the city of Brandon in particular.

In seeking local support EEC also met with Jim Brannan who serves on the Premier’s Economic Advisory Council. Jim has reviewed the project and provided input about how to build support.

Analysis Methodology

Over the period of April 2012 to March 2013, the authors analyzed the barriers associated with community owned renewable energy and community economic development. The 30-page model that is documented on the EEC web site was reviewed. Deployment of an actual 5 MW project in the RM of Elton was chosen as a straw man to test all elements of the model, including development of the offering statement, cost analysis for managing investors, and modeling of the wind data at the specific site using more than one specific manufacturer’s turbine. The knowledge and experience of community power expert Ed Hale was leveraged and technical details are documented in the Project Description Report (shown in Appendix B). The project team completed a literature search regarding barriers for community power projects in other jurisdictions. Finally, we interviewed expert resources both within Manitoba and in other
provinces and elsewhere in North America who are subject matter experts in community power and rural economic development.

The barriers that were identified during the analysis are documented in detail in the next sections. Overcoming these barriers, which is the focus of the second year of funding, will result in strong long-term economic program that marries the emerging renewable energy industry with community economic development in a way that strengthens the Manitoba economy over the long term.

The Barriers

While all of these benefits can accrue to the province from community owned renewable energy projects, the current renewable energy development process presents significant barriers to Manitobans now. Community groups, farmers, co-operatives and First Nations are unable to bid into Manitoba Hydro’s RFP process. The legal, financial, and interconnection requirements of the RFP are too onerous for them to participate.

The barriers that face community power in other jurisdictions have, in some cases, been documented and are available elsewhere for review. Manitoba has the opportunity to deploy a premiere community power program by developing and implementing solutions to the barriers described below.

Barrier #1: Capacity Building

Communities launching a renewable energy project must be able to secure adequate up-front funding for many aspects of a large capital project. For wind projects, this includes resource assessment, project evaluation, business plan development, legal and accounting support, geological studies, bird studies, environmental assessments, equipment and legal services.

The resources required for developing projects includes substantial investment in lawyers, accountants and technical services. Addressing this capacity building is a key requirement for community-based initiatives.

A formal mechanism for ensuring community engagement is required. An example of such a mechanism is Nova Scotia’s Community Economic Development Investment Fund (CEDIF) program, which allows communities to organize around and invest in a specific community-based economic endeavor. Other mechanisms have traits that vary in the level and manner of community participation. For example, the Val Eo model provides a structured approach that leverages a cooperative model specifically.

There is a need to pool organizational, technical, accounting and legal resources. Combining knowledge and transparency under this development model provides a solid foundation for the government and communities to build on in the coming decades. EEC has been working with TREC to ensure that Manitoba’s participation would be included in the TREC funding application for development of a nationally available back-office software tool called the Community Power Investment Platform (CPIP). The following
section of that TREC-written funding application describes the relationship between Manitoba’s EEC and Ontario’s TREC:

While developed by TREC for application to TREC developed RE [renewable energy] co-ops, we will work with other RE co-ops to apply the tool to their projects. Partners include Elton Energy (3MW wind co-op) in Manitoba and Windfall Ecology Centre (20 MW wind co-op) on Georgina Island, Ontario. The tool will first be applied to TREC’s 250 kW solar co-op in Toronto (SolarShare) and 10-20 MW wind power co-op in Bruce County, Ontario (called Lakewind).

Going forward, the CPIP will be available to other groups on a cost recovery basis. TREC will approach local community power organizations, and through standard business negotiation, the parties will develop terms of service and sign a contract. Once the local community power organization begins fundraising, it gives its investor checks to TREC’s CPIP (or arranges with TREC’s CPIP to allow electronic transactions through the web site). TREC’s CPIP manages the investments and communications for the community power projects according to the terms of service (annual reports, mailings, email notifications, PDF creation, newsletters, web site updates, password management, etc.).

We will also share the results of our work at relevant conferences, workshops and other events such as the Annual Community Power Conference, the Community Power Finance Forum, Ontario Co-operative Association membership, Manitoba Sustainable Energy Association and other provincial co-op and or renewable energy associations.18

The lack of a province-wide framework is a significant impediment for communities to be able to work together rather than in competition. Multiple communities working in isolation have been shown to be counterproductive to the overall goals of stronger community economic development.19 For example, EEC attempts to cooperatively share information with other Manitoba community power projects over the past several years have not generally been successful because community power projects have viewed each other as competitors.

EEC, as one of its mission elements, is sharing information, and there is merit in the government supporting the growth of our experience into a province-wide initiative so that other communities can benefit. If communities are forced to compete for contracts, the opportunity to reduce upfront costs is lost. For example, expensive meteorological wind studies should be targeted toward the greatest places of opportunity, including interconnection availability and substation capacity, rather than left to a purely competitive and primarily speculative model by communities acting individually.

An important challenge associated with capacity building is ensuring that community participation will occur when a project is launched. An example of successful community engagement based on word of mouth relationships to sell equity shares comes from an Ontario project called WindShare. This project, which consisted of a single 750 kilowatt (kW) wind turbine located on the Toronto waterfront, enabled 500 local Toronto citizens each to own $500 shares in the project, up to a maximum of $5,000 each. The entire project cost approximately $1,600,000 when it was launched in 2002. Half of the project was owned by WindShare and half of the project was owned by Toronto Hydro, the local municipal utility.
WindShare was formed as a share capital cooperative, and allowed a monetary return on the investment for each cooperative member. The $800,000 for the cooperative’s half of the project was raised through a grassroots marketing campaign over a three month period that utilized personal relationships and membership presentations in gatherings throughout Toronto (e.g. church basements). Further research of community engagement through word of mouth is required with regard to its applicability to rural communities.

In other jurisdictions, a variety of programs have been developed to assist in overcoming the barriers associated with capacity building. For example, recognizing the need for capacity building in the community power sector, Ontario launched an organization called the Community Power Fund (CP Fund), which is a non-profit co-operative corporation that provides financial resources and programs to support a renewable energy economy that is owned, developed and governed by Ontario communities.20 Nova Scotia focused its COMFIT (“community feed-in tariff”) program on community projects exclusively.21

**Barrier #2: Community Economic Development Recognition**

Manitoba Hydro’s mandate is for low-cost, safe, reliable power. Manitoba Hydro states that its electricity rates are among the lowest in North America and it is rightfully proud of its efficient delivery of electrical services to the residents of Manitoba.

Manitoba Hydro’s operating model is that it builds generating stations (usually dams) that connect to its transmission system (>~55kV) that in turn connects to multiple distribution systems, that in turn provide electricity to consumers, both industry and residents, as shown here:

```
Generation → Transmission → Distribution → Consumers
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Non-hydro renewable energy (which, for purposes of this discussion, includes wind, photovoltaic, biogas and biomass sources) represents an emerging technology that has a key unique characteristic:

- It can be added to the distribution system rather than to the transmission system

Because it can be added to the distribution system, there is an opportunity to provide direct community economic development. For example, a cluster of wind turbines sized appropriately to provide 100% of a community’s electricity needs could be deployed near a community that owns these same wind turbines. By interconnecting these wind turbines with the Manitoba Hydro power grid, the community benefits from the firming and shaping that the Manitoba Hydro system provides while owning the tangible assets that provide its electricity needs.

This would work in the manner described in the following diagram:
By allowing local community members to invest in a local project, Manitoba Hydro would provide the opportunity for communities to leverage renewable energy as a means of receiving a return on their investments. This investment would be a long-term investment in the future of the community, so would be eligible for use with an RRSP (registered retirement savings plan). EEC has confirmed that RRSP-eligible investments in community power will be possible in the province.

Several studies have quantified the benefits of local ownership. In 2004, the General Accounting Office of the US Federal government published a report that showed that for eleven locations sampled, local ownership, compared to non-local ownership, would result in an average of 2.3 times as many jobs and 3.1 times as much economic benefit. Another study by the University of Minnesota at Morris, showed that a local project in Big Stone County, Minnesota, would provide up to five times the local economic benefits.

Directing Manitoba Hydro to consider community economic development in the power it purchases from a third party is a sensitive topic for the government to address. EEC seeks leadership at the highest levels in government to support the concept of connecting economic development to renewable energy in a way that focuses on a sustainable legacy for Manitoba residents. The “third party” from whom Manitoba Hydro makes such purchases should ideally be the residents of the province, supported by adequate centralized technical expertise. Local communities invest in infrastructure that is designed to harvest the wind. The wind, representing a viable agricultural product, requires no fertilizer or other non-sustainable inputs, results in a low environmental footprint, and drives economic benefits over a 20-year time period.
The development of Manitoba’s wind, biomass and solar resources will require adjustments by Manitoba Hydro because the model is different than that which is used to build and manage large hydro projects. The generally smaller size of community-based projects means that interconnection will be on the distribution system rather than on the transmission system.

As the financial reality of power generation changes, so does the public support on how Manitoba Hydro does business in 2013 and beyond. Manitoba Hydro brings great value to the province, and adjustments to the relationship between Manitobans and Manitoba Hydro that doesn’t threaten Manitoba Hydro’s existence (e.g. avoiding the radical approach of privatization) can result in a path that successfully addresses the emerging changes in the nature of the delivery of electricity services being seen throughout North America.

**Barrier #3: Contract Uncertainties**

Contract uncertainty is a barrier to community projects. Renewable energy contracts are frequently awarded through a Request for Proposals (RFP) process. In a typical RFP, Manitoba Hydro would publish an RFP, vendors would describe their approaches, features and costs, and Manitoba Hydro would select the best option using a set of criteria. The challenge of this model for community participants is proposals must be secured with a bond and proof of financial backing. Project bids that are submitted by corporations have appropriate risk capital, economies of scale and corporate history to produce a competitive bid. These corporations increase their opportunity to secure an overall profit by bidding on multiple opportunities and while many bids are lost, the bids that are successful are priced in a manner that ensures that the costs of the lost bids are incorporated into an overall profit.

Communities, on the other hand, by definition, have an interest in bidding only on projects that are applicable to their local jurisdictions, and are therefore unable to cover the costs of lost bids. A typical community project starts with local support and a volunteer steering committee. In its formative stage the local initiative has no financial history, few resources for completing an RFP submission and little opportunity to secure a financial bond. In a competitive bidding process, large and non-local bidders can outbid local, community-focused bidders, even though local, community owned bidders offer other important financial and non-financial benefits.

Community owned projects also have difficulty raising the capital needed to advance the project in the early stages when there is much uncertainty as to the contract price or the likelihood of securing a contract. Community investment and initiative thrive best when there is some certainty that the initiator will at least have the opportunity to prove itself in the marketplace if it invests substantial sums in up-front development expenses.

Non-community bidders deploy sophisticated marketing and sales mechanisms to determine which specific projects to bid on in order to gain a competitive advantage. An RFP that focuses strongly on price may consider rural economic development aspects of a project to be a direct cost to the project’s bottom line and therefore a societal value that will be sacrificed in order to maximize profit.
An alternative approach to RFPs is a feed-in tariff (FIT). In a FIT model, Manitoba Hydro would set the price it would pay (per kWh) for power from various forms of renewable energy (solar, wind, biogas, etc.), and project proponents would determine whether it is economically viable to build projects based on the price (“tariff”) being given for the electricity that the project would feed into (“feed-in”) the electrical grid.27

Ontario’s program of rapid development of wind projects appears to have often been at the expense of local support and is now facing the consequences. Specifically, the key organizations representing communities in Ontario, OSEA (Ontario Sustainable Energy Association) and TREC (Toronto Renewable Energy Co-operative) sought greater community participation and requested that community involvement be a required criterion for renewable energy projects in the Ontario FIT program. The requirement for community involvement was, however, not included in the final program. As a result, Ontario’s FIT program was weighted to favour large, corporately controlled developments rather than community owned and community organized initiatives. Acceptance into the program was based on a point system in which those projects with the highest numbers of points were awarded contracts.28

The point system provided qualification points for financial strength, corporate history and other requirements that favoured large, established corporations against which communities were unable to compete for the awarding of contracts. Research is needed to investigate working solutions in other jurisdictions that have successfully encouraged the development of locally supported renewable energy development.

Rather than deployment of a tendering system (i.e. project choice based on an RFP), community owned renewable energy projects benefit from an approach that recognizes contract certainty. Recognizing the significant social benefits of community economic development, a FIT-like program could be deployed that focuses on the community power sector. This approach has been pursued in Nova Scotia.29

Barrier #4: Development Costs

North America wind development has historically taken a very different approach compared to the European model. European wind power development started in Denmark following legislation that enabled small cooperative wind developments on the condition that all the investors resided within 3 km of the wind turbines. This assured that there was strong local support for the project. The history of wind power development in Denmark and in Germany has been a history of local community development. This has been an important factor in explaining the strong wind power programs in these two countries.30

Conversely, wind power development in North America has been driven by large corporate investment. With the availability of excellent wind resource sites in sparsely populated areas of the United States and Canada there was a strong incentive to build big where economies of scale provided higher returns.

However this high-density, big-build model has created conflict as it has been applied in populated areas. This is particularly evident in Ontario where recent rapid wind development has taken place without the participation of local communities. As a result,
a small but vociferous campaign to stop the development of wind power has emerged in Ontario.

Experience has shown that community acceptance comes with community involvement. If a community doesn’t benefit from a local development why should they support it? A successful wind power program needs to balance cost efficiencies with community acceptance.

The following table compares the development and construction cost of small and large wind projects. Project administration costs are not included. The turbine used for this modeling has a nameplate capacity of 2.3 MW.

<table>
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<tr>
<th>Project Item</th>
<th>1 Turbine</th>
<th>2 Turbines</th>
<th>3 Turbines</th>
<th>5 Turbines</th>
<th>10 Turbines</th>
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<td>$1,879,130</td>
<td>$1,815,217</td>
<td>$1,790,000</td>
</tr>
</tbody>
</table>

The economics of wind projects, in particular, are highly sensitive to economies of scale. It costs more per kWh (kilowatt-hour) to build a 4.6 MW wind project (2 turbines) compared to a 46 MW project (20 turbines). For example, the environmental assessment costs for a project with 20 turbines is only 37% more than for a project with 2 turbines. The development costs of a wind farm represent a significant part of the overall project and a large part of the development costs stem from permits and studies. Work is needed to identify whether the scope of the studies can be adjusted or streamlined for community owned wind projects. It will be important to quantify the advantages and external benefits to the local community to order to understand and justify the increased cost per kWh produced.

Communities require some assurance that investments in pre-project development costs are likely to be recouped based on the probability of the project eventually being built. For example, the cost of erecting a meteorological tower, collecting two years of data and obtaining a final report and analysis is approximately $50,000, which is an amount that is difficult for communities to invest in if the opportunity is speculative. A community may have a strong wind regime but, unless there is some indication that a project has a high probability of being built, there is little incentive to invest in the opportunity.
Any solutions to manage the barrier of development costs must take into account the increased time required for information flow and consensus-building required for communities. While corporate investors can gather millions of dollars in a very short time period, communities require the ability to evaluate options, consider alternatives, understand details, and gain comfort based on varying levels of knowledge and experience.

Securing funding for analysis of community power programs has been challenging due to how the community development aspects are viewed with respect to the rural agricultural sector. For example, the Manitoba Rural Adaptation Council (MRAC) is a private not-for-profit corporation that administers Agriculture and Agri-Food Canada funds for innovative agricultural projects and acts as a catalyst to stimulate industry and government activity where gaps are identified. EEC’s wind initiative was considered ineligible for this program because it was not seen to be sufficiently focused on agricultural activities.

**About the Authors**

**Dan Mazier** is a founding member of Elton Energy Cooperative (EEC) and currently is the president of the cooperative. Dan worked at Simplot Fertilizer (now Koch) in Brandon for 17 years until 2001 after which time he started full time farming. Dan obtained his 4th class power engineers ticket and is a graduate of the School of Agriculture Diploma program from the University of Manitoba. Dan has been very active in his community by participating on many boards over the years. Dan had his first experience in watershed development by being appointed to the Mid Assiniboine Conservation District. On this board Dan developed a real appreciation of how we must care for and develop our communities by working with the environment we live in. Dan also has served as a school trustee for Rolling River School Division. This experience made him realize the value of having a good public education system. Dan always felt that if one kept an open mind and learned new things it would give one the ability to adapt to changing times. Dan has been active at Keystone Agricultural Producers for over a decade and is currently serving as Vice President. Dan operates a grain and oilseed farm with his family near the village of Justice NE of Brandon.

**Carl Cunningham** has been a member of Elton Energy Cooperative since its founding in 2006. Carl is also a director of the Manitoba Sustainable Energy Association and has maintained an interest in various renewable energy projects. Currently, he is a trainer for Workplace Education Manitoba which promotes and delivers essential skill training in the workplace. As the operator of an 800 acre grain and livestock farm at Nesbitt, Carl has been involved in primary agriculture since 1972. He participates in agricultural policy deliberations and continues to be involved with the Keystone Agricultural Producers, a general farm policy organization. Carl has considerable experience in project management and education having worked with the Canadian Rural Transition Program, a program providing support to farmers leaving farming. While working with the Prairie Practitioners Group, Carl participated in applied research in community development which saw the establishment of a working group system for Turtle Mountain Sustainable Ventures. Research conducted focused on a feasibility study on the potential usages of...
co-products from a straw to ethanol process. Other renewable energy research projects included a costing and logistics study for the Southwest Fibre Coop.

Laurence LaFond has been associated with EEC since its inception, and has volunteered many hours over the past 10 years in support of community power in Manitoba, Ontario and Minnesota. In 2003, Mr. LaFond joined Minnesota’s community power initiative called C-BED (Community-Based Energy Development), and maintains strong connections to Minnesota’s community power program. In 2004, Mr. LaFond joined ManSEA (Manitoba Sustainable Energy Association) and engaged with Dan Mazier and Carl Cunningham to write a response to Manitoba Hydro’s Expression of Interest in Wind Power. The response focused on community and rural economic development aspects of Manitoba’s wind power program. Since 2005, Mr. LaFond has been on the board of the Toronto Renewable Energy Co-operative (TREC), whose mission is to further community power. Mr. LaFond has been working for MTS (Manitoba Telecom Services) since 2003, in the areas of Information Systems and IT Security. He has worked in MTS’s Winnipeg, Toronto and Vancouver offices over the past 10 years, and currently lives in Vancouver.

Ed Hale has a long history with community power. In 1998 Mr. Hale joined the Board of Directors of the Toronto Renewable Energy Co-operative (TREC) to help create a vision for community ownership of wind power projects in Ontario. From 1999 until 2003, as the Executive Director of TREC he directed the difficult process of planning, permitting and constructing a wind turbine in downtown Toronto. As the founding President of WindShare, the co-operative that jointly owns the turbine in conjunction with Toronto Hydro, Mr. Hale steered the development of the co-operative organization as well. Over 700 members invested in ownership of the turbine through the first-ever wind power co-op share offering. This has since become a model for other communities interested in community power generation. Mr. Hale is a founder and past board member of the Ontario Sustainable Energy Association (OSEA), a province-wide, member-based, non-profit organization. The mission of OSEA is to facilitate the transition to a sustainable energy economy in Ontario through the development and support of community-based energy initiatives. Mr. Hale is also a founding director of the Community Power Fund Established in 2007, the Community Power Fund supports project development activities of Ontario-based community organizations pursuing local renewable energy projects, through the provision of a number of financing instruments to support community power, including grants, loans and investment equity.
Appendix A: Letters of Support

Assiniboine Community College Letter of Support:

Dear Dan,

Thank you for meeting with us on February 6, 2008, where you outlined Elton Energy Cooperatives’ Community Power Investment Model for Manitoba. The model you described is very intriguing and could provide a process for future community wind projects to develop in Manitoba.

As you know, Assiniboine Community College (ACC) is in the process of developing a Sustainable Energy Systems – Wind Turbine Technician program. In addition, we are exploring other renewable energy programming opportunities and developing related applied research projects. Through our training and research, we support community and business efforts to implement more sustainable technologies.

As ACC develops its programs for the emerging human resources needs of Manitoba, we would like to offer our support and encouragement of your initiatives. We look forward in due course to discussions about how we might collaborate with Elton Energy.

Once again, thank you for the meeting and the potential to work together in the future.

Sincerely,

Derrick Turner
Dean - School of Agriculture & Environment
Ext 7237

Jack Moes
A/ Vice President Academic
Dean Research & Innovation
Ext 6198
Rural Municipality of Elton Letter of Support:

RURAL MUNICIPALITY OF ELTON
FORREST, MANITOBA
R0K 0W0

September 12, 2007

Dan Mazier
Elton Energy Co-op
Justice, Manitoba
R0K 1C0

Wind Farm Support:

Dear Mr. Mazier:

Further to your attendance at the regular meeting of the Council of the Rural Municipality of Elton on September 10, 2007, enclosed please find Certified Resolution No. 2007-190 in support of the location of a wind farm within Elton boundaries, along with the intention to address this initiative in our current review of the Development Plan and Zoning By-law.

As well, for your information, Councillors Harvey Paterson (728-7473) and Danny Kowbel (728-0934) have been appointed to investigate/coordinate with your group for additional information and determination of viability of wind farms within Elton. It would be appreciated if a meeting could be arranged as soon as possible to discuss such items as: future market indications, City of Brandon interest (do they wish to be a funding partner or their general intent of interest), future MET tower leasing/rental opportunities for the ten-year period for which Elton must retain ownership.

It has also been indicated that more detailed information on capital versus construction costs is needed. Thank you for the information that you forwarded on assessments, which I will use to calculate Elton municipal taxation levels. Discussion also indicated that Council wishes to have access to the data information collected, but that Elton Energy Co-op would be responsible for marketing it.

I trust that the above is the information required at this point. Please do not hesitate to contact me should you have any questions on this matter.

Sincerely,

Kathleen E. I. Steele, CMMA
Chief Administrative Officer

Cc Council Members, R.M. of Elton
Rural Municipality of Blanshard Letter of Support:

January 31st, 2008

Elton Energy
c/o Mr. Dan Mazier
General Delivery
JUSTICE, MB
R0K 1C0

Dear Dan:

RE: Support for “Community Based Approach” to Renewable Energy Development

Thank you for inviting representatives from the R. M. of Blanshard to Elton Energy’s informational meeting held on January 10th, 2008 which outlined where Elton Energy has come from and on specifics of Manitoba community projects. A co-op owned wind farm would allow local members of the community to buy into a project and see a return on their investment, even if they don’t have a turbine directly on their property. At a regular meeting of Council, the council representatives, whom attended the meeting, reported to Council that the meeting was very informative and urged that support be given for a “community based approach” to renewable energy development in rural Manitoba. Please be informed that the council of the R. M. of Blanshard passed the following resolution at their meeting:

“That the Council of the R. M. of Blanshard authorize the C.A.O. to write a letter of support to keep investigating the “Community based approach” to renewable energy development in rural Manitoba.”

CARRIED.”

Please accept this as Blanshard’s support for a “community based approach” to renewable energy development in rural Manitoba. Good luck with this project and Council looks forward to further information on this worthwhile endeavour.

Yours truly,

Diane Kuculym, C.M.M.A.
C.A.O.
R. M. of Blanshard

dk
June 12, 2008

Elton Energy Cooperative
C/o Elton Municipality
Forrest, MB
R0K 0W0

Dear Dan Maxier, Chairman

Re: Elton Energy Cooperative Manitoba’s Community Owned Wind Projects

The Melita and Area Economic Development Corporation support the below resolution from presented at the Association of Manitoba Municipalities at the 2008 Southwest Conference.

Resolution:

Whereas Elton Energy Cooperative (EEC) has developed a model for 100% Community owned renewable energy projects;

And whereas, a pilot project is needed to prove the model works within the Province of Manitoba;

Therefore be it resolved that Elton Energy Cooperative request the Rural Municipality of Elton to take forward a request to AMM to lobby the Province of Manitoba and Manitoba Hydro to develop and implement the EEC community investment model for all communities of Manitoba.

We strongly feel that government needs to be responsible and further support and develop a place for one hundred percent community wind projects in Manitoba. We support the Elton Energy Cooperative community wind project based on ownership, transparency, participation, cooperation and economic benefits to investors and recommend the implementation of a pilot project in Manitoba.

We support the Elton Energy Cooperative in their effort to become the first community based wind project in the region.

Sincerely,

Amy Louitt/ Economic Development Officer
Melita and Area Economic Development Corporation
Town of Oak Lake Letter of Support:

TOWN OF OAK LAKE

RESOLUTION NO. 2008-073

June 25, 2008

Moved by “Beryl Williams”

Seconded by “Audrey Taylor”

RESOLVED that the Town of Oak Lake supports the Elton Energy Cooperative in their initiative to develop a model for a 100% community owned renewable energy project.

CARRIED.

Chairman “J. Sigurdson”

Certified a true and correct
Copy of Resolution No. 2008-073

Mary Smith
Chief Administrative Officer
Rural Municipality of Sifton Letter of Support:

RURAL MUNICIPALITY OF SIFTON

RESOLUTION NO. 2008-164

June 10, 2008

Moved by “Fred Faucher”

Seconded by “Russell Thiessen”

RESOLVED that the RM of Sifton supports the Elton Energy Cooperative in their initiative to develop a model for a 100% community owned renewable energy project.

CARRIED.

Chairman “G. Harrison”

Certified a true and correct
Copy of Resolution No. 2008-164

Mary Smith
Chief Administrative Officer
Appendix B: Project Description Report

Elton Energy Cooperative Wind Farm

Draft Project Description Report

Prepared for:
Elton Energy Co-operative Inc.
c/o RM of Elton
Forrest MB
R0K 0W0

Prepared by: Ed Hale   April 7, 2011
Updated: May 24, 2012
General Information

Overview

The Elton Energy Cooperative is proposing to build the Elton Energy Cooperative Wind Power Project in the Rural Municipality of Elton, 3 kilometers east of the town of Forrest. The project will be located on approximately 3 acres of privately-owned agricultural land. The proposed development will consist of two wind-powered turbines supplying up to 4.6 MW of electricity to the Manitoba grid. Access roads will be constructed, wind turbines will be erected and electrical cables will be routed to feed the electricity to a substation connected to the Manitoba Hydro distribution lines adjacent to the property.

Contacts

Elton Energy Cooperative will be responsible for the design, construction, operation and decommissioning of the proposed Project, and will be considered as the “proponent” for the purposes of the Project. The proponent’s office and contact information are as follows:

Elton Energy Cooperative
c/o RM of Elton
Forrest MB
R0K 0W0

Tel: (204)720-4646

The Project Director for the applicant is
Ed Hale
Tel: (250) 598-5163
Email: ehale@trec.on.ca

Authorizations Required

At the provincial level there are multiple permits and approvals that may be required to facilitate the development of the Project. Their ultimate applicability will be determined during the project planning process and based upon the Project’s detailed design. The following is a list of key permits and approvals that may be required; however additional permits may also be required.

Table 1. Key Provincial Permits and Authorizations

<table>
<thead>
<tr>
<th>Key Permit /Authorization</th>
<th>Administering Agency</th>
<th>Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Incorporation</td>
<td>Manitoba Finance</td>
<td>A cooperative must be registered to do business in Manitoba</td>
</tr>
<tr>
<td>Environmental Licensing and Environmental Assessment</td>
<td>Manitoba Conservation – Environmental Approvals Branch</td>
<td>The Manitoba Environment Act requires an environmental license and assessment be completed prior to development of a wind farm.</td>
</tr>
</tbody>
</table>
Barriers to Community Owned Renewable Energy

**Work Permit**
- **Municipal Offices**
- A development permit is required from the local municipality if the development is located in the rural municipality.

**Land Titles**
- **Department of Finance**
- Register with Land Titles prior to securing private land.

**Power Purchase Agreement**
- **Manitoba Hydro**
- A Power Purchase Agreement (PPA) is required if the project proponent plans to wholesale electricity to Manitoba Hydro for sale.

**Interconnection and Operating Agreement**
- **Manitoba Hydro**
- To connect generation to the distribution system a separate agreement must be signed.

**Department of Labour**
- **Department of Labour**
- The Department of Labour requires all electricians to be licensed and companies to comply with Provincial Workplace Health and Safety regulations.

**Order In Council**
- **Department of Energy, Science and Technology**
- Under the Manitoba Act, an Order in Council is required to allow a Non Utility Generator to supply power in Manitoba.

<table>
<thead>
<tr>
<th>Key Permit /Authorization</th>
<th>Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Work Permit</td>
<td>A development permit is required from the local municipality.</td>
</tr>
<tr>
<td>Building Permit</td>
<td>Compliance with building codes</td>
</tr>
<tr>
<td>Entrance Permit</td>
<td>Entrance from county roads</td>
</tr>
<tr>
<td>Transportation Permit</td>
<td>Adherence to road safety and suitability</td>
</tr>
</tbody>
</table>

**Federal Involvement**

It is expected that a Federal Screening report will not be required for the Project, as it is not anticipated that it will cause a ‘trigger’ under the Canadian Environmental Assessment Act (CEAA), such as a Harmful Alteration, Disruption or Destruction of fish habitat under the Fisheries Act, or application for project funding under a future program similar to ecoEnergy for Renewable Power. However, the agency consultation program for the Project will include all federal departments and agencies typically interested in wind power projects (e.g., Department of National Defense, Environmental Canada, Transport Canada, etc.). All required federal permits and approvals required for the Project will be determined during the REA process, but may include those listed in Table 3.

<table>
<thead>
<tr>
<th>Permit /Authorization</th>
<th>Administering Agency</th>
<th>Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aeronautical Obstruction Clearance</td>
<td>Transport Canada</td>
<td>Turbine Lighting and marking</td>
</tr>
<tr>
<td>Land Use Program</td>
<td>Nav Canada</td>
<td>Aeronautical safety mapping</td>
</tr>
</tbody>
</table>
**Project Information**

*Energy Sources*

The proposed Project is a land based wind powered generation project which will be community owned. The project will consist of 2 wind turbines and depending on the model chosen, will have a maximum power rating of between 2 and 2.3 MW. Since the electricity is produced from the wind, there are no emissions other than those created from the construction activities. There are no other fuel sources associated with the generation of energy from the project.

*Project Components*

This section provides a general description of the major equipment and infrastructure associated with operation of the Project. The preliminary project description provided in this document will be refined and finalized as Elton Energy proceeds through the permitting process.

*Wind Turbine Generators*

Current project modeling specifies two Siemens SWT-2.3-82 VS wind turbines. The turbines have a name-plate capacity of 2.3 MW for a project total of 4.6 MW. The specific make and model of wind turbines to be used may change as project planning progresses.

*Electrical Collection System*

A transformer in the base of the turbine tower or sited within three metres of the base of each tower will raise the turbines output voltage to 25 kV to match the distribution voltage of the Manitoba Hydro substation located adjacent to the generation site. An underground or pole-mounted collector line will transport electricity from the turbines to the Manitoba Hydro substation.

*Electrical Interconnection*

At the substation the project’s collection system will connect through switchgear to the stations distribution voltage.

*Project Activities*

There are three phases of a wind project lifecycle: construction, operation and decommissioning. Construction activities are short-lived, extending over a period of less than a year. Once operational, the turbines can be expected to be in service for the term of the 20 year power purchase contract, after which, a decision would be made whether to extend the life of the Project or to decommission. The activities under each of these are summarized in the following table.

<table>
<thead>
<tr>
<th>Construction</th>
<th>Turbine Sites</th>
</tr>
</thead>
<tbody>
<tr>
<td>Staking of site work area and installation of erosion and runoff controls</td>
<td></td>
</tr>
<tr>
<td>Construction of temporary access roads and crane paths</td>
<td></td>
</tr>
<tr>
<td>Delineation of temporary work areas and installation of temporary facilities</td>
<td></td>
</tr>
<tr>
<td>Completion of necessary site grading</td>
<td></td>
</tr>
<tr>
<td><strong>Installation of crane pads</strong></td>
<td><strong>Installation of underground and/or above ground gathering lines on lease lands</strong></td>
</tr>
<tr>
<td>--------------------------------</td>
<td>----------------------------------------------------------------------------------</td>
</tr>
<tr>
<td><strong>Installation of tower foundations</strong></td>
<td><strong>Installation of overhead and/or underground gathering lines on transmission line poles along municipal road rights-of-way</strong></td>
</tr>
<tr>
<td><strong>Tower/turbine erection</strong></td>
<td><strong>Tree trimming and right-of-way clearing as required and approved by Township and/or Manitoba Hydro</strong></td>
</tr>
<tr>
<td><strong>Connection of wind turbine to electrical gathering system</strong></td>
<td><strong>Installation of wooden hydro poles within existing municipal road right-of-ways</strong></td>
</tr>
<tr>
<td><strong>Restoration of temporary work areas</strong></td>
<td><strong>Stringing and installation of the gathering line conductors</strong></td>
</tr>
<tr>
<td><strong>Completion of permanent access roads</strong></td>
<td><strong>Grading of switchyard site</strong></td>
</tr>
<tr>
<td><strong>Landscaping (final grading, topsoil replacement, revegetation, fence installation etc.)</strong></td>
<td><strong>Construction of concrete footings and pads</strong></td>
</tr>
<tr>
<td><strong>Collection System</strong></td>
<td><strong>Installation of transformers and ancillary facilities</strong></td>
</tr>
<tr>
<td><strong>Substation and Interconnect</strong></td>
<td><strong>Connection to Manitoba Hydro grid</strong></td>
</tr>
<tr>
<td><strong>Operations</strong></td>
<td><strong>Commissioning of the Project</strong></td>
</tr>
<tr>
<td><strong>Turbine Sites</strong></td>
<td><strong>Periodic truck access for maintenance</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Routine maintenance (oil changes, cleaning blades) and repairs</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Remote condition monitoring</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Meter calibrations</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Grounds keeping</strong></td>
</tr>
<tr>
<td><strong>Collection System and Substation</strong></td>
<td><strong>Periodic maintenance on gathering lines, interconnection and switchyard</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Inspection and maintenance of condition of poles and lines annually</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Tree trimming as required and approved by Township</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Switchyard vegetation control</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Testing and maintenance</strong></td>
</tr>
<tr>
<td><strong>Decommissioning</strong></td>
<td><strong>Removal of tower and turbine infrastructure</strong></td>
</tr>
<tr>
<td><strong>Turbine Sites</strong></td>
<td><strong>Removal of foundations as agreed to or as necessary in accordance with the land lease agreement</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Turbine site grading (dependent upon new proposed use)</strong></td>
</tr>
<tr>
<td><strong>Collection System</strong></td>
<td><strong>Gathering line excavation and removal as necessary in accordance with the land lease agreement</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Removal of interconnection lines and poles</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Site restoration</strong></td>
</tr>
<tr>
<td><strong>Substation</strong></td>
<td><strong>Removal of switchyard foundations, equipment and ancillaries as necessary in accordance with the land lease agreement</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Removal of grid interconnection</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Site restoration</strong></td>
</tr>
</tbody>
</table>

**Land Ownership**

The Project is spread across a gross area of 6 acres. All the land on which the Project would be located is privately owned with Elton Energy having option agreements effective Nov 7 2008 for 20 years in place with the landowners for leasing the turbine sites.
Environmental Effects

Heritage and Archaeological Resources

Natural Heritage Resources

Water Bodies

Air, Odour, Dust

Noise

Land Use and Resources

Provincial and Local Infrastructure

Public Health and Safety

Areas Protected under Provincial Plans and Policies

Maps
Appendix C: Wind Study Summary

Between June 2009 and September 2011, EEC measured the wind at the proposed project site. This 2-year study provides assurance that the wind at the site is adequate for the project, and is a common requirement in order secure debt financing and investor confidence that the project is viable. The study used calibrated and certified equipment, so provides a high confidence level that the data collected represented the actual conditions at the site over the 2-year period.

The following image shows the actual meteorological tower at the site:

The detailed wind study is considered confidential information. A well-executed wind study brings a high level of confidence in the amount of electricity that a wind project will produce. By measuring the wind without interruption for a 2 year period, a wind rose can be created that describes the production output of a wind turbine from various directions with sufficient detail that financing risk of the overall project is reduced significantly. The higher the met tower is, and the longer the met tower is left in place, the more accurate the resulting wind study will be.

Different wind turbine vendors produce varying power output at varying wind speeds, and these characteristics are unique among turbine vendors. A certain make and model of turbine that works well in the type of winds found near St. Joseph, for example, may
Barriers to Community Owned Renewable Energy

not be as efficient at capturing the type of winds found near the RM of Elton. These characteristics are based on factors such as blade design, tower height, gear box design, etc. A period production value is calculated for each unique make and model of wind turbine and is based on measured and extrapolated data from the met tower. An example of one such wind turbine configuration wind rose and period production value is shown here:

![Wind Rose Diagram](image)

Period Production
4959. MWh

This information is used as one of the inputs to determine the financial returns of the project. Other inputs include construction costs, maintenance costs, etc. EEC has leveraged a sophisticated model designed for community power projects by community power experts in order to calculate the costs and returns for the project.
Appendix D: Interview Questions and Responses

Interviews were conducted with key experts, including a Manitoba community economic development expert, a Manitoba government energy policy expert, a Manitoba wind power policy expert, a Manitoba sustainability expert, an Ontario community power project leader and an Ontario lawyer who has extensive experience with cooperatives and community power. Responses were received for each question from each respondent. Responses are shown below in their condensed form, as the interviews were lengthy, usually an hour. The interviews were conducted August 22, 2012, November 27, 2012, November 29, 2012, December 3, 2012, January 21, 2013 and February 4, 2013.

1. What is your experience with renewable energy?
   - More than 10 years covering multiple renewable energy types (wind, solar, etc.).
   - While my focus is in community enterprise development, I see how the marriage of renewable energy and CED can benefit Manitobans in the way you describe.
   - Was involved since back in the late 90s.
   - Lots of knowledge over the last decade.
   - Though not a primary focus of expertise, I have a strong understanding of the various technologies particularly wind.
   - Familiar with the provincial government activities regarding renewable energy, particularly wind, over the past decade.
   - Participated in many co-operative based projects.

2. What is your experience with community economic development?
   - Community economic development is a key part of the renewable energy equation and my experience with it in the context of renewable energy activities is strong.
   - Addressed many formal and informal projects associated with economic development.
   - Strong knowledge in the context of renewable energy.
   - Have participated in community enterprise development for many years.
   - My experience with renewable energy co-operatives includes economic development.
   - Economic development is a big focus of my job.

3. What do you see as the primary barrier to community owned renewable energy?
   - Securing sufficient grid capacity for community projects has been an issue with Lakewind and also smaller solar projects. Communities aren’t able to secure the resources or stamina to sustain the delays.
• Community wind requires pressure to change the Hydro Act. There is no
incentive for Manitoba Hydro to purchase renewable energy.
• Legal structure: management of shares, classes of shares, etc.
• A key political element is Manitoba’s claim to “the lowest energy cost in North
America”. Manitoba is moving away from wind in general, and the focus is on
large wind if anything.
• Community power (and wind in general) will have a difficult time competing
with natural gas in a head-to-head competition, so tread carefully in
advocating wind over natural gas in the contemporary market.
• Commitment at a high level in government was needed before the permitting
of energy coops started to happen.
• Large developers have risk capital for acquiring land rights and doing early
development work. Community groups don’t.

4. What additional barriers do you believe are relevant to the development
of community owned renewable energy?

• Projects can’t muster much momentum when it is highly uncertain if they will
be able to acquire a power purchase agreement and there is no guarantee
what the price will be.
• Coop regulations just now catching up to the needs of community energy
coops.
• FIT program was introduced before community project funding assistance
was in place giving the established corporate developers a head start.
• The coop regulators have been slow to adapt to energy coops. Need for
better consultation between coop regulators and the coop association.
• It’s hard to get financial or community support for an uncertain long shot.
• Financial regulations don’t understand community power. It’s a non-
conventional investment model and is therefore viewed with extreme caution
by FSCO (Financial Services Commission of Ontario). SolarShare’s ability to
market its bonds without restriction is dependent on FSCO.
• Banking institutions are hesitant to finance projects. In Germany and
Denmark, where 50% of projects are community owned, the banking
institutions partner more easily with community groups. In Canada,
community groups have to get very creative in their financing arrangements,
appealing to their membership to provide bridge loans or construction
finance.
• Large, commercial developments have sparked the opposition that represent
a minority but have been effective at appearing to represent the masses.
• See the CURA-TREC Market Scan & Analysis completed by Ryan Foster at
York University re: the barriers to renewable energy cooperatives in Canada
dated Aug. 10 2012. This document provide additional relevant information
for your research and is current.
• There is a belief that the employment angle isn’t a large driver for a
community power program.
• The Ontario FIT program has a bad reputation and should not be held up as
an example to emulate.
- Coops were at the forefront of wind power development in Ontario in the early years (Windshare, founded in 1997, built in 2002) but as the sector developed new regulations pushed them to the back of the line.
- Since then Ontario energy policy has been slanted to favour large developers.
- The FIT program awarded priority points for evidence of advanced early development, for proof of financial depth and proof of a solid 10-year corporate history. The FIT program lacked incentives to bring community projects to the top of the list.
- No points were awarded for proof of community investment or for community support. Local projects were disadvantaged while out-of-province projects got the contracts. This is the biggest cause of community backlash to the wind industry in Ontario.

5. **What solutions do you think we should consider?**

- The province is in development of the next climate change plan, and adding renewable energy at a small scale may be a viable addition.
- A significant driver is to get off of Alberta gas: profits would go back to "community".
- Using Manitoba Hydro and Manitoba Public Insurance as examples of a relationship between provincial corporations and Manitoba residents may be success models to build on regarding a municipality or community owning a project.
- Green Building Act may be a model for community power: LEED silver was designated as the minimum green standard for every building funded by the Province: MEC payback was quick and the program worked fine.
- Another model that is newer, but may be appropriate to consider reviewing in more detail, is the food in the province (Certified Local Food Plus) following a "crawl, walk, run" model.
- Consider two classes of shares: one that leverages the CED tax credits and one that doesn’t. Investors that cannot benefit from CED-eligible shares include seniors on fixed incomes and investors that may be from outside of the province (understanding that we want to focus on provincial members, there may be some cases where external investors are desirable).
- Legal structure: consider the Nova Scotia equity pools.
- Consider the co-op equity fund that invests in coop development.
- Recommended approach: form a “People’s Commission” formed by a consortium of KAP, Council of Manitoba Chiefs, Chambers of Commerce and environmental groups that holds hearings in 3-4 places across the province. Secure Tory, Liberal and NDP support, and push for development of community owned renewable energy.
- Establish a compromise position of 10 community projects at ~10-20 MW each.
- Focus on the Première’s office, as the 1000 MW of wind has been sidelined as a front burner initiative.
- Focus on community economic development, climate change strategy, local self-sufficiency and increased savings for Manitoba Hydro, which can improve the export market.
• Consider going directly to the Premiere rather than through the Minster’s office. Ministers need to be on side, but the Premiere is the key. No legislation is required. Rather, executive leadership can make the program successful.
• Messaging is critical. The Ontario FIT program is not a selling point. The focus should be “community economic development”, not “renewable energy development”.
• Investigate the opportunity for the government to increase the CED amounts. Specifically, consider lifting the project limit to an amount that covers the project size for community projects.
• Consider asking the government to support a government guarantee specifically targeted for community power that would be worth 100 basis points.
• Consider pushing for a specific target such as 100 MW of community wind over 4 years.
• Consider turning the “People’s Commission” concept on its head. Because the Premiere is very tax knowledgeable, so could be an advocate for interesting approaches such as the use of builders bonds that have no provincial tax.

6. What additional information do you think is valuable for a barriers and solutions analysis?

• Coops make contributions to the Manitoba Coop Association. Raises $100K - $150K per year, primarily in grants.
• CED (Community Enterprise Development) tax credit is $30K/yr/person, to a maximum of 30%.
• The Act specifies that $1 million is the cap for wind projects specifically (raised from $500K).
• CEDnet resolution: specify the specific language to be submitted by the end of September 2012.
• Energy Savings Act focuses on the demand side and is quite good in Manitoba by financing the retrofit up front with payback over 20-30 years, which matches with the savings. Manitoba is not as good on the supply side because there is no model for feed-in tariffs or other pricing mechanism for renewable energy supplies. Ontario is the opposite: it has a good supply side program with a poor demand side program.
• District systems for First Nations in Peguis and Fisher River: 50 homes each get geothermal systems. Note that geothermal doesn’t work well in cities due to the availability of less expensive natural gas in urban areas. Geothermal works well in locations where electric heat is required.
• The 10 communities should not include those that are currently supplied by diesel (it is difficult to get big turbines deployed in these locations). Pick 10 that are rural (Minnedosa, Elton, etc.). Manitoba Hydro could participate in selecting when these projects should be deployed.
• A feed-in tariff would be difficult due to the FIT challenges in Ontario.
• Consider the elements in the book Build Prosperity. Manitoba Hydro sets policy for significant initiatives such as the Mitsubishi relationship, community wind, large wind and determining whether a manufacturing base can be built.
• There is consideration that Manitoba Hydro is firming and shaping the 500 MW of wind that is being produced in North Dakota.
• The key is to maximize the value and minimize the cost of the community power program.
• May not need to amend the Hydro Act because the government in power can accommodate a community power program outside of the provisions of the Act.
Endnotes

1 See http://www.eltonenergy.org/pdf/Community_Power_Investment_Model.pdf for the detailed model.
3 The wind study consisted of erecting a 60-metre meteorological tower and measuring wind speed constantly for a two-year period beginning in June of 2009. The met tower was taken down in November 2011. It was located one mile East of Forrest, in the RM of Elton. It was erected by Ontario Wind Smith and the data was validated by Zephyr North.
4 Ed Hale, one of the authors of this study, was engaged by EEC in order to investigate specific technical options and develop the technical recommendations for the EEC project.
5 The interconnection information was gathered through conversations with Bob Graham of Manitoba Hydro’s distribution group. A formal interconnection study will be required at the time the project gets approved for moving forward. More information about the requirements for this project may be found in the Project Description Report that is shown in Appendix B.
6 EEC held three formal community-wide meetings at the Forrest Rink since 2006. The first of these meetings in early 2006 introduced the concept of community power. In January of 2008, the meeting included the participation of community power experts from Ontario, Quebec and Minnesota. In 2012, a progress update was provided to members of the local community. All of the community meetings had a strong turnout.
7 EEC partnered with Assiniboine Community College (ACC) to support the development of a turbine maintenance program. This ACC program was put on hold due to a lower than expected penetration of wind turbines in the province.
8 EEC formally threw its support behind a grant submission by the Toronto Renewable Energy Co-operative (TREC) to develop a back office software program to manage community power investors in multiple jurisdictions. TREC contracted with a software developer. The software that was developed manages the investment amounts per investor, creates T5 forms at the end of each tax year, and coordinates the delivery of emails and newsletters to community power investors. EEC’s requirements were included in the initiative. Laurence LaFond, one of the authors of this study, sat on the steering committee for the development of this software.
12 In November of 2005, the Government of Manitoba announced an intention to deploy 1,000 MW of wind over the coming 10 years, 50 MW of which would be set aside for community power. Currently, Manitoba has two wind farms, one at St. Leon which is 99 MW in size and one in St. Joseph which is 130 MW in size. More information on the original 2005 press release can be found at http://www.gov.mb.ca/chc/press/top/2005/11/2005-11-21-01.html.
13 According to the Government of Canada, installed wind power capacity in Canada has expanded rapidly in recent years and is forecasted to continue to grow at a rapid pace.
due to increased interest from electricity producers and governmental initiatives. In 2011, Canada had 3,094 wind turbines operating on 152 wind farms for a total installed capacity of 5,265 megawatts, compared with only 60 wind turbines, 8 wind farms and 23 megawatts in 1997. See [http://www.nrcan.gc.ca/energy/renewable/1297](http://www.nrcan.gc.ca/energy/renewable/1297) for more information.

14 See Manitoba hydro Act, section 22, which reads as follows: “Notwithstanding any provision to the contrary in any Act of the Legislature or in any regulation, rule, or by-law made under any such Act, the corporation has the sole and exclusive jurisdiction, right, and authority, over and with regard to all matters to which this Act applies in any place, locality, area, or territory in which the corporation supplies power to the actual user thereof or in which it is engaged or intends to be engaged in a program of construction with a view to supplying power therein.”


16 The Nova Scotia CEDIF program was launched to stimulate local investment in the province and to reduce the high rate of capital leaving the province. It is a pool of capital, formed through the sale of shares to persons within a local community, whose purpose is to invest in local businesses. The directors must be elected from their defined community. There are 47 CEDIFs in NS, which issued 120 offerings and raised $40 million. Similar programs exist in New Brunswick and Prince Edward Island. The CEDIF model is used by renewable energy cooperatives in the Atlantic provinces.


18 From the application TREC submitted to the Cooperative Development Initiative in December, 2009.


21 The Nova Scotia COMFIT program establishes uniform feed-tariff rates (i.e. the prices to be paid for the electricity) in order to promote the development of local renewable energy projects. See [http://nsrenewables.ca/feettariffs](http://nsrenewables.ca/feettariffs) for more information.

22 The report, titled “Wind Power’s Contribution to Electric Power Generation and Impact on Farms and Rural Communities” can be found at the following location: [http://www.gao.gov/new.items/d04756.pdf](http://www.gao.gov/new.items/d04756.pdf). In an appendix to the report, the GAO describes a model that was created to assess the impact of wind power investments on employment and economic output at the state and local levels. Eleven counties in five states were reviewed. Employment and income impacts were an average of three times greater for projects that are locally owned than for projects that are owned by out-of-area firms. The report states that “a single 40 MW project built in Pipestone County, Minnesota would generate about $650,000 in new income for the county annually. In contrast, 20 locally owned projects that are 2 MW each (40 MW total) would generate about $3.3 million annually in the same county.” (p.80)

23 See [http://www.c-bed.org/pdf/Big_Stone_Community_Corporate_Wind.pdf](http://www.c-bed.org/pdf/Big_Stone_Community_Corporate_Wind.pdf). In this study by Arne Kildegaard from the University of Minnesota at Morris, titled “Community vs. Corporate Wind: Does it Matter Who Develops the Wind in Big Stone County, MN?”, the conclusion states as follows: “Our simple scenario analysis for a 10.5 MW project suggests that community wind has 5 times the economic impact on local value added, and 3.4 times the impact on local job creation, relative to a corporate-owned development. These numbers should probably be considered an upper bound on the differential impacts, since most projects in practice will involve an outside-the-region equity partner, or at the very least a discounted sale of the PTC.” (p. 21)

The RFP that was created by Manitoba Hydro in 2007 for the most recent procurement for wind energy, and that resulted in the development of the 133 MW St. Joseph project in Southeastern Manitoba, may be found at the following location: http://www.hydro.mb.ca/regulatory_affairs/electric/gra_08_09/information_requests/round2/Appendix_59-RFP025089_(2007_03_31)_Final.pdf.

The Community Power Fund has developed a program to address this funding gap, which can be found at http://www.cpfund.ca/cpcapital/our-model.

More information about feed-in tariffs may be found at http://www.wind-works.org.

An article titled “Highs and lows for Canada solar co-op” (http://www.renewableenergyfocus.com/view/23862/highs-and-lows-for-canada-solar-co-op/) describes the TREC experience with raising community capital in a regulatory environment that favours RFPs.


Information in this table was developed by the authors and leverages Natural Resources Canada’s Retscreen software suite, available at http://www.retscreen.net/ang/home.php.