

MANITOBA

COMMUNITY POWER INVESTMENT MODEL

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EXECUTIVE SUMMARY

WHAT IS COMMUNITY POWER?

Community power is a way for individuals to make an investment with favourable returns while supporting local communities and helping the environment.

WHY COMMUNITY POWER?

Developing a community power program for all of Manitoba by deploying the Community Power Investment Model described in this document 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.

HOW THE MODEL WORKS

We propose creating a Manitoba Community Power Cooperative (CPC) that allows residents of Manitoba to directly invest in renewable energy projects and receive a financial return on that investment. The CPC does the following:

- Centralizes all technical and financial activities for community-based renewable energy projects such as research, the management of investment shares, disbursement of returns, completion of annual tax forms, development of financial statements and fulfillment of financial audit requirements
- Distributes a portion of the profits to communities so that local communities are strengthened by the development of renewable energy projects
- Manages a sophisticated, market-ready financial model (pro forma) tailored for community-based power projects that leverages the expertise of developers, financial experts and legal experts

This is truly a made in Manitoba solution. We have learned from other community power programs and leveraged their knowledge and experience to create North America's most sophisticated community power program.

START SMALL

The model specifies the deployment of an initial wind project whose location is to be determined through transparent discussions between interested communities and Manitoba Hydro. After the initial project is deployed, the program will be reviewed for effectiveness and adjusted as it grows in order to maximize benefits for Manitoba's communities.

THE BIG PICTURE

\$2.5 billion leaves Manitoba every year to pay for non-renewable energy imports, such as petroleum products to run our vehicles and natural gas to heat our homes. Based on Manitoba's population, this represents \$2,100 for every man, woman and child in the province.

We need to make up for that \$2,100 by selling Manitoba-made commodities and services, such as agricultural products and climate-friendly hydro power. To the extent that the price of non-renewable energy imports rises faster than price of our hard-earned commodity exports, our future standard of living will decline.

The deployment of a community power program helps keep rural Manitoba healthy in three ways:

1. Directly increases investment in Manitoba's rural communities, and therefore proportionally reduces "economic leakage"
2. Connects Manitoba communities to our energy use, which is increasingly important for informed decision-making and participation in an energy-constrained world
3. Increases Manitoba Hydro's opportunity to sell more hydro power to the export market

DEVELOPING RENEWABLE ENERGY FOR LONG-TERM PROSPERITY

By focusing on community return on investment, transparency and a public-private partnership approach rather than simple competitive price in a proprietary bidding environment, Manitoba's Community Power Investment Model leverages the emerging renewable energy industry for the benefit of long-term rural economic development and adds value to Manitoba Hydro.

Additional renewable energy will be developed in Manitoba with or without a community power program; the larger economics and political climate assure this outcome. 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.

Let's do it right!

OVERVIEW OF THE MODEL

WHAT IS COMMUNITY POWER?

Community power is a way to make an investment with favourable returns while supporting the local community and helping the environment. Community power is receiving increasing attention throughout North America because it ties the benefits of the emerging renewable energy industry to the communities in which projects are built. It provides a way to maximize locally owned and locally used energy for the benefit of local economies. The following elements are considered requirements for Manitoba's community power program, and were used to guide the development of this model:

- Ownership control must be retained by community power investors at all times, where the term 'community power investor' is defined as an individual person residing in the province, and excludes non-human entities such as corporations and foundations
- A very small portion (less than 10%) of a project is allowed to be owned or controlled by a single individual
- A resolution of support for the project must be passed by the local jurisdiction in which the project is sited, such as the local rural municipality
- The community power program must operate with a high degree of transparency
- Residents and local landowners with a significant interest in the project, such as those landowners on whose land turbines are placed and/or transmission infrastructure traverses, must be allowed to invest in the project at the highest rates of return available to all investors
- Investors must have the ability to sell shares at any time, so that investment dollars are not tied up for long periods of time
- The rate of return must be risk-averse and fair for all investors
- The overall community power program must encourage broad participation from individuals of varying incomes and varying geographical locations

The above community power elements are based on a community power workshop that was hosted in Forrest, Manitoba in January, 2008, for which we flew in North America's premier community power experts from Minnesota, Ontario, Quebec and British Columbia. These elements provide a strong framework for Manitoba's community power program.

THE COMMUNITY POWER COOPERATIVE (CPC)

The centerpiece of the Community Power Investment model is the creation of a ***province-wide cooperative*** called the Community Power Cooperative (CPC). The CPC provides the following specific services:

- ***The CPC centralizes technical and financial expertise***, such as technical research, vendor relations, the buying and selling of investment shares, and back office tax reporting and financial audits for Manitoba's community power program, freeing the local communities from highly specialized technical, financial and fiscal management responsibilities.
- ***The CPC distributes a portion of the profits to communities directly*** so that local communities are strengthened by the development of renewable energy projects.
- ***The CPC manages an innovative pro forma*** that (a) levelizes net cash by varying the price in order to reduce cash flow challenges and (b) ties returns to prevailing interest rates in order to protect projects against inflation.

The CPC is described in detail later in this document.

ENTITIES THAT MAKE UP THE MODEL

The model requires the participation of the following key entities as shown in figure 1:

- The **Investor** invests in the community power program by purchasing shares in the CPC. The investor receives a return on his or her investment.
- The **Local Community Power Organization (LCPO)** initiates the development of a community power project. It acts as the limited partner in a limited partnership with the CPC, and markets investment shares in the project to local community members. It represents the interests of the LCPO in the governance of the CPC by taking a seat on the CPC Board of Directors (one board seat per LCPO).
- The **Community Power Cooperative (CPC)** provides centralized technical, financial and investor services for community-based projects. It hires experts and invests in tools that provide technical services and create and manage the sale of equity shares to investors from across the province. It also provides investor relations services, completes tax reporting and responds to financial audit requirements for all LCPOs. It acts as the general partner in the limited partnership arrangement with one or more LCPOs.
- The **Project Developer** is contracted by the LCPO and CPC partnership and provides professional technical services to ensure the success of the community power project.
- The **Bank or Credit Union** provides loans for a portion of the project capital costs of the project, expected to be between 50% and 75%.
- The **Utility** (Manitoba Hydro) allows interconnection of the community power project to the power grid, and purchases the power through a ~20-year power purchase agreement that results in a reasonable financial return to the project.
- The **Ratepayer** purchases renewable community-based power as part of the overall energy supply mix.

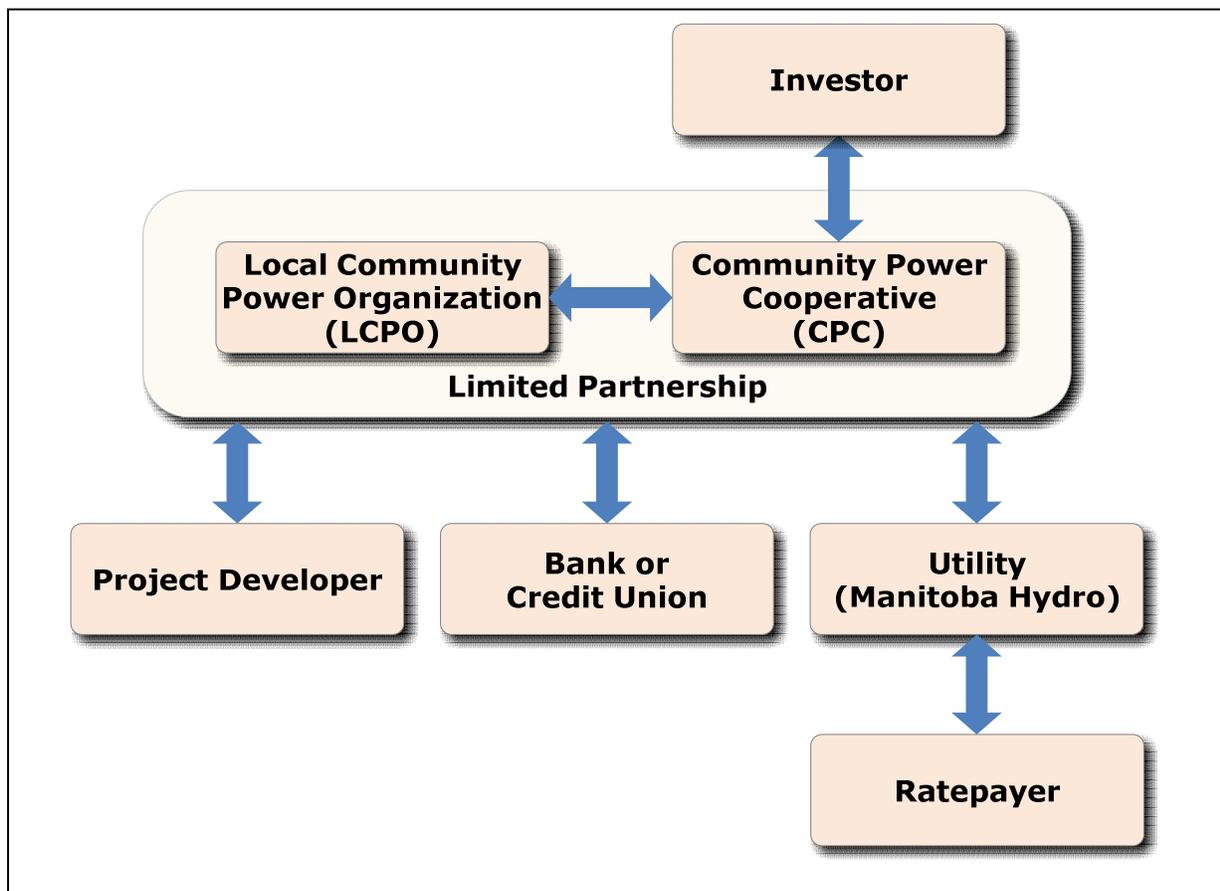


Figure 1. Relationship among entities of the model

PROJECT PHASES

The following describes the phases of a community wind project using this model:

- *Phase 1: The community initiates the project.* One or more local community-minded entrepreneurs initiate a project, forming a Local Community Power Organization (LCPO). The LCPO, which can be organized in many ways (a cooperative, an association, an LLC, a corporation, a municipality, a First Nations Band, etc.), raises pre-development dollars and assesses the general viability of the project.
- *Phase 2: The community completes the preliminary feasibility analysis.* The LCPO confirms the viability of the renewable energy project (for example, it may erect a meteorological tower to assess the wind for several years), secures a preliminary assessment from Manitoba Hydro that interconnection is possible and acquires signed land lease agreements. The CPC may work with the LCPO in a consultative fashion during this phase (for example, the CPC may assist the LCPO in discussing interconnection issues with Manitoba Hydro).
- *Phase 3: The community establishes the limited partnership with the CPC.* The LCPO formally engages with the CPC in order to establish a limited partnership. The CPC reviews the LCPO's feasibility analysis. As part of this legal transaction, the following occurs:
 - The LCPO and the CPC form a limited partnership in which the LCPO becomes the limited partner and the CPC becomes the general partner.
 - All local entrepreneur equity investment is bought out by the CPC (the investment may be converted to CPC shares) so that the project is managed with consistent, community-based financial controls through the province-wide CPC.
 - The titles to all assets are transferred to the CPC in an arrangement that ensures that the assets are held for the benefit of province-wide investors.
 - The LCPO and CPC ensure that a resolution of support for the project has been passed by the local jurisdiction in which the project is sited, such as the local rural municipality.
 - The LCPO receives a seat on the non-profit CPC Board of Directors that gives the LCPO governance control over the CPC (shared with other LCPO and investor board members).
- *Phase 4: The partnership develops a pro forma and secures a power purchase agreement.* The partnership negotiates with Manitoba Hydro for a power purchase agreement based on the strengths of a pro forma that is shared between the partnership and Manitoba Hydro.
- *Phase 5: The partnership raises the required funds.* The partnership develops an offering statement, and raises the equity portion of the project (approximately 25%-50% of the total project costs) through a person-to-person fundraising campaign. The partnership presents its business plan to a bank or credit union in order to secure debt financing for the remainder of the project costs.
- *Phase 6: The partnership acquires all permits and approvals.* Activities during this phase include completion of environmental assessments, bird studies, airport clearances, local permits, easements, finalized land lease agreements, an interconnection agreement and a power purchase agreement.
- *Phase 7: The partnership hires a project developer and builds and commissions the project.* Through the use of a project developer leading the technical activities, the partnership purchases the capital equipment, secures services from suppliers and contractors, acquires appropriate insurance, and completes construction of the project.
- *Phase 8: The partnership operates the project over the life of the ~20-year power purchase agreement.* The CPC handles all investor relations and financial reporting activities. The partnership ensures that the equipment is maintained and that maintenance agreements are in place. The CPC manages a mechanism to allow the investors to easily sell shares at any time to investors-in-waiting throughout the ~20-year agreement.
- *Phase 9: The partnership decommissions the project.* As a condition of financing the project, the partnership must specify in the project pro forma that an appropriate amount of money is set aside for decommissioning costs in order to return the project property to a greenfield state. This is required in order to reduce the liability of the local community at the end of the project.

In summary, the community through the LCPO initiates the project, and the limited partnership of the LCPO and CPC develops and manages the project. At the time that the LCPO enters into the limited partnership with the CPC (in phase 3), the partnership becomes the primary entity with whom all other entities interact.

THE MODEL IN DETAIL

THE CPC IS ORGANIZED AS A COOPERATIVE

The organizational centerpiece of the model is the CPC, which is organized as a cooperative. The cooperative structure was chosen for several reasons:

- The definition of a cooperative, including its “one member, one vote” structure, is consistent with the elements of a community power program defined above
- 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 for a corporation).
- Cooperatives are allowed to sell investment shares through a person-to-person marketing campaign, rather than through a stock broker, which reduces transaction costs and is consistent with the person-to-person, local focus of community power.

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”). The CPC is not a worker’s cooperative in that cooperative members are not asked to provide volunteer time or services, and the CPC is not a producer’s cooperative in that cooperative members are not asked to provide a resource such as crops, but rather it is 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. It expresses cooperative values, such as voluntary and open membership, democratic member control, member economic participation, autonomy and independence, education, training and information dissemination, cooperation, and concern for community.

The Manitoba Securities Commission is expected to support the deployment of the CPC as an acceptable business model to allow investment in community power projects.

THE LCPO AND CPC FORM A LIMITED PARTNERSHIP

The LCPO forms a limited partnership with the CPC as shown in figure 2. The partnership between the LCPO and the CPC as described in *Phase 3* of the project allows each partner to focus on what it does best in order to meet the objectives of a robust community power program:

- The general partner (the CPC) provides the technical and financial specialization that is required for successful deployment and ongoing maintenance of the project, and it manages the ongoing investor activities that allow a large number of small investors to efficiently participate in the project.
- The limited partner (the LCPO) engages local community members through personal contacts in order to facilitate and encourage community members to directly invest in the local renewable energy project and receive returns on that investment. This minimizes marketing costs for Manitoba’s community power program and maximizes returns to the investors and the local communities in which the investors live.

The partnership develops a share offering that is reviewed and approved by the Manitoba Securities Commission. At the time of the deployment of the project, the LCPO markets shares in a direct person-to-person fashion. The LCPO may leverage the resources of the CPC for the purpose of developing province-wide marketing as required. Investors become members of the CPC and purchase investment shares at a specified price per share.

The model specifies that the CPC rather than the LCPO is the general partner. The reason for this is that control of capital assets is always retained by the investors (without exception). The province-wide investors must have control over the assets they own and are therefore the general partners in the partnership.

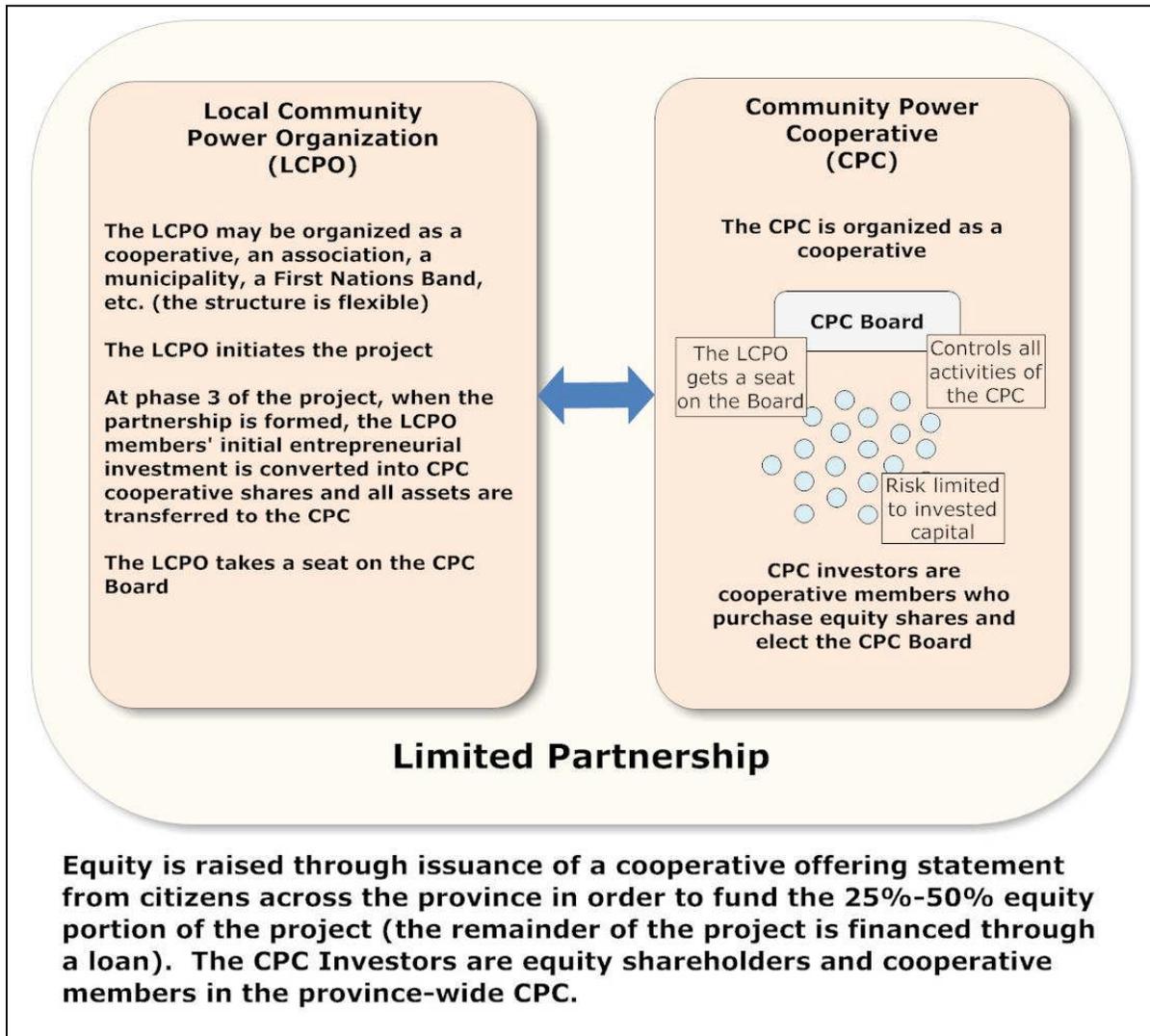


Figure 2. A province-wide cooperative raises funds through an offering statement, and allows investors from across the province to participate through the investment of equity shares in the cooperative.

Ensuring that the investors are province-wide, rather than strictly local, provides the following additional advantages:

- Different areas of the province vary in their ability to deploy renewable energy projects. If, for example, the best wind areas of the province are in southwest Manitoba, then based on the concept of fairness, LCPOs and the local investors from southwest Manitoba should not be the only ones allowed to invest in and receive the benefits of Manitoba's overall community power program. Manitoba Hydro benefits from this arrangement as well in that it can specify that projects be built in the geographic regions with the best resources and therefore provide the lowest cost energy for the province-wide community power program.
- The larger the geographic area is, then the larger the investor market for potential sellers of shares is, and therefore the more liquid the shares are. Because the CPC acts as the intermediary for the sale and purchase of shares, its ability to sell shares to anyone in the province (as opposed to being able to sell them only in a limited geographic community) makes the overall program more attractive to all investors.
- Manitoba Hydro has stated its intention to limit the size of the community power program for the time being to just 3 megawatts (MW) for the entire province. If investments in Manitoba's community power program are further restricted geographically, then a relatively small number of investors will invest a relatively large amount each in the initial project(s), resulting in limited participation in Manitoba's community power program. Opening up investments for that 3 MW program to anyone from across the

province will allow broader participation using smaller investment amounts, which is consistent with the spirit of a province-wide community power program.

THE MODEL SPECIFIES FINANCIAL RETURNS RATHER THAN PRICE

In a free market, business success is determined by maximizing profits and minimizing costs. Businesses compete against each other based on price signals. In the regulated monopoly of the electricity markets, however, a single entity (in this case, Manitoba Hydro) controls the product, but must answer to a higher authority (the Government of Manitoba) in order to set the price.

This model leverages the regulated monopoly status of Manitoba Hydro by specifying that the CPC and Manitoba Hydro negotiate a specific return on investment based on costs and profits that are transparent to both parties rather than negotiating a price based on information that is proprietary to each party. Instead of having an incentive to withhold information, both parties have an incentive to describe as accurately as possible the true costs of the project. Once the financial details are negotiated based on the targeted rate of return of 12% at today's Bank of Canada interest rate of < 1%, the resulting price is then set for the ~20-year project and no further changes are made (with the exception of the inflation adjustment described below). Because the price is locked at the time of negotiation, the partnership has a strong incentive to operate over the subsequent years as efficiently as possible in order to maximize returns for the communities and the investors. The actual returns will vary year over year based on performance and cost containment as practiced by the partnership.

Our recommendation for 12% returns is based risk and is consistent with returns being sought by investor-owned utilities (IOUs) in North America recently, as shown in the examples here:

- 11%-13% returns targeted by Enbridge in an article dated June 30, 2010:
<http://business.financialpost.com/2010/06/30/enbridges-colorado-wind-project-encouraging-for-future-growth/>
- 12.2% returns targeted by MidAmerican energy in an article dated September 1, 2009:
<http://www.renewableenergyworld.com/rea/news/article/2009/09/midamerican-energy-and-nextera-square-off-over-wind>

The IOU returns shown through the examples above are lower than for conventional private projects, which target returns of between 16% and 20% as described in a study completed by Lawrence Berkeley Labs in May 1996 (<http://eande.lbl.gov/EA/EMS/reports/38921.pdf>):

"Required equity returns for privately owned, project-financed windpower projects depend on perceived technology and resource risks. Domestic windplant return on equity (ROE) requirements range from a low of 16% (Wong, 1995) to a high of over 20% (Amitz, 1995; Hoffman, 1995). We assume an 18% ROE, typical of recent U.S. windpower projects.

Because IOUs use corporate-finance approaches, a company-wide ROE is typically used when analyzing project economics. This ROE is set by state public utility commissions (PUCs) in rate-cases, and varies with time and by utility. We assume a 12% utility ROE, which is broadly in-line with recent utility experience (EPRI, 1993). The capital structure of public utilities does not typically contain equity in the traditional sense."

Here is an example of higher returns established for a private project:

17% returns targeted by Sweden's Adapto Advisors AB in an article dated April 7, 2010:
<http://www.bloomberg.com/news/2010-04-07/adapto-advisors-seeking-to-raise-134-million-for-a-new-wind-energy-fund.html>

THE MODEL LEVERAGES THE WINDSHARE EXPERIENCE

Significant information for development of this model comes from an Ontario project called WindShare, which consists of a single 750 kilowatt (kW) wind turbine located on the Toronto waterfront. WindShare is a good ownership model for community power, in that 500 local Toronto citizens each 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 is owned by WindShare and half of the project is owned by Toronto Hydro, the local municipal utility. WindShare was formed as a share capital cooperative, and allows 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).¹

WindShare is considering launching a new project with an additional share offering. Assuming the new project proceeds, WindShare is expected to require significant equity from the local community, raised in a manner similar to the original WindShare offering, through word of mouth and personal relationships. This model uses the same marketing approach that leverages word of mouth and personal relationships to sell shares. This approach is consistent with the elements of community power as described in the section titled "What is Community Power?"

THE CPC PROVIDES THREE KEY SERVICES

1. THE CPC CENTRALIZES TECHNICAL AND FINANCIAL EXPERTISE

The CPC centralizes technical and financial expertise, such as technical research, vendor relations, the buying and selling of investment shares, and back office tax reporting and financial audits for Manitoba's community power program, freeing the local communities from highly specialized technical, financial and fiscal management responsibilities.

The CPC provides a centralized place for communities from across Manitoba to leverage technical and financial expertise about the community power program. The province-wide CPC is to be deployed with the first project, and the project pro forma for that first project will assume that it is the only project in the system, and would therefore include the ongoing costs of operating the CPC for the length of the ~20-year power purchase agreement with Manitoba Hydro. If and when more projects come into the system, the price per kilowatt-hour (kWh) of the incoming projects would reflect the fact that many of the fixed costs to operate the province-wide CPC have already been covered by the initial project.

As each participating community develops subsequent projects (assuming there are subsequent projects), the LCPO/CPC partnership for the subsequent projects would be responsible to negotiate a separate power purchase agreement with Manitoba Hydro and sell enough CPC equity shares to make that specific project viable. Those shares would be sold by word of mouth, resulting in additional membership in the CPC. As a province-wide entity, members from across the province would belong to a single cooperative, and individual projects would be aggregated, thus reducing the financial risk for any specific project.

The CPC structured as a cooperative matches well with a controlled deployment of community-based wind power, because the marketing of equity shares occurs at a pace that reflects the level of public interest in the community power program. For example, if the first project proves to be successful, a second project could be brought forward relatively quickly. Conversely, if the first project proves to be unsuccessful, additional project deployment would stop. If it is later determined that it is in the public interest to deploy community power projects at a faster rate, Manitoba Hydro (perhaps through the direction of the government), could specify an increase in the rate of return for the community power investors, thus increasing the attractiveness of the program, and acting as a simple incentive to deploy larger amounts of community power in a controlled fashion.

¹ WindShare members have realized modest financial returns. The Manitoba community power program is using the experience gained by the WindShare project in order to reduce the risk and maximize the returns for Manitoba's program.

The CPC also manages the buying and selling of investment shares. For the investor, this is designed to be a simple process. The partnership provides an offering statement to the prospective investor that outlines the risks of the investment. The investor provides a signed acknowledgement that he or she has read and understands the offering statement and sends to the partnership a cheque for both the CPC membership share (perhaps ~\$30, if required) and the investment shares (investment shares are proposed to be \$1,000 each).

For an initial project of 3 MW, using an expected 1:3 equity-to-debt ratio, a total of 2,500 shares would need to be sold (for a total equity investment of \$2.5 million for a project valued at \$7.5 million). The investment dollars are placed in an escrow account until the project gets commissioned, at which time the investor receives a receipt describing his or her share purchase. The shares would be Registered Retirement Savings Plan (RRSP) eligible and Tax Free Savings Account (TFSA) eligible.

An investor sells his or her shares at any time by notifying the CPC, who arranges for a buyer from an “investor-in-waiting pool”, which is a group of new or existing investors that have an interest in investing, but who were unable to invest in the initial project, perhaps because it was fully subscribed. Note: if there are no investors-in-waiting, then the selling investor cannot sell his or her shares, a risk that is conveyed to the investor at the time that the shares are purchased. The CPC arranges for the transfer of share ownership. The buying and selling investors receive pro-rated dividends and/or bond payments for the period of time that they have held the shares in their possession.

The CPC develops and/or contracts with other parties for appropriate software tools and processes to manage the investments in a safe and auditable manner. The CPC is responsible for ensuring that financial requirements are met with regard to investor privacy and management and security of sensitive financial data. The CPC leverages financial and legal expertise as needed to fulfill this requirement.

2. THE CPC DISTRIBUTES A PORTION OF THE PROFITS TO COMMUNITIES DIRECTLY

The CPC distributes a portion of the profits to communities directly so that local communities are strengthened by the development of renewable energy projects.

The second key service that the CPC provides is that it distributes a portion of the profits to communities directly. An innovative component of the model is that the total returns are divided between the individual investors and the communities in which the investors live as shown in figure 3.

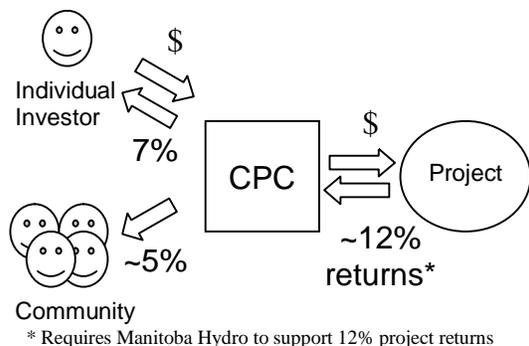


Figure 3. The model's distribution of returns

The model specifies targeted returns of 12%, which are allocated 7% to individuals and 5% to communities. Both the individual returns and community returns fluctuate from year to year based on how the project performs compared to the projected performance described in the pro forma and as written into the power purchase agreement that was negotiated between the partnership and Manitoba Hydro at the beginning of the ~20-year project period.

In a year in which actual returns match the targeted returns of 12%, then the individual returns are 7% and community returns are 5%. If the project does better than expected or worse than expected, then the returns are distributed according to a formula as

shown in figure 4. For example, if the actual total returns are 10% rather than the targeted 12%, then the community returns are 3.02% and the individual returns are 6.98%. The detailed formula that results in these returns is available in a spreadsheet that may be downloaded at the following URL:

<http://www.eltonenergy.org/downloads>Returns.xls>.

How Actual Total Returns Impact Individual Returns and Community Returns

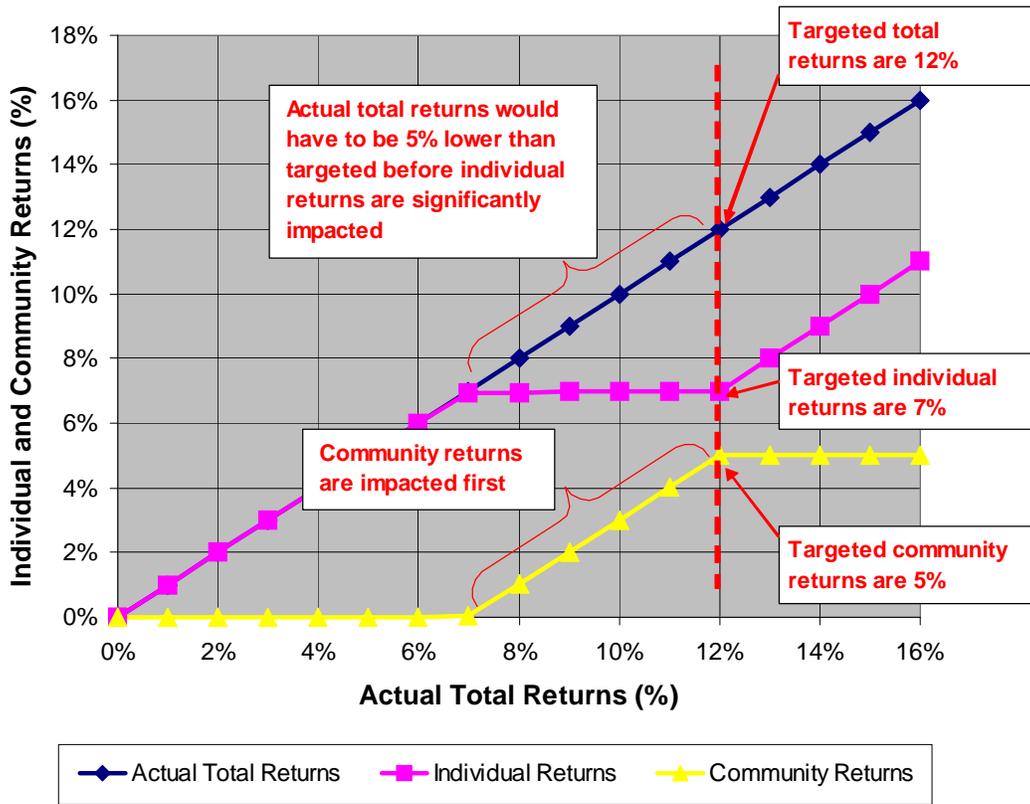


Figure 4. Individual returns and community returns are distributed according to a unique formula that protects investors as shown here. See <http://www.eltonenergy.org/downloads>Returns.xls> for detailed information.

Community returns are distributed based on a voting process by the investors in each community. At the time that the investors purchase shares, they choose a default rural municipality (RM) to which to apply their community returns (the community returns for those investors that don't specify a community are distributed based on population to all RMs). The investors associated with a specific RM submit desired destinations for the community return dollars that conform to criteria that are established by the CPC Board of Directors. Potential community return recipient projects could be as diverse as fixing up a local hockey rink, creating a bursary for a local scholarship to a community college, or helping a local family that is in need. The dollars would be distributed based on the voting received, and all disbursements would be made available for public view on the CPC web site.

While geographical groupings of the community returns pools would be defined by the CPC Board, an individual investor could join any existing community returns pool in the system. A resident of Winnipeg, for example, could join a community returns pool near Thompson, where he or she grew up or has friends, relatives, or some other connection to the community.

The details of the community returns mechanism is managed by the CPC through a consultative, transparent community-based process. The distribution mechanism is volunteer-based, in order to minimize the overhead, and therefore maximize the community returns.

Minimum Rural Distribution

Because the population of Winnipeg is very high relative to the population of rural Manitoba, and because this model is designed to primarily benefit rural Manitoba, an additional formula has been developed to ensure that no less than 75% of all community returns are distributed to RMs in rural Manitoba (i.e. outside of the Winnipeg area). As long as at least 75% of the community returns are designated for RMs outside of Winnipeg, no redistribution of community returns occurs. However, if the total pool of investors initially specifies that more than 25% of all community returns be designated for urban communities (i.e. communities in Winnipeg), then the redistribution formula adjusts the returns appropriately in order to meet the minimum rural distribution requirements. This formula is shown in a separate tab of the spreadsheet referenced above.

3. THE CPC MANAGES AN INNOVATIVE PRO FORMA

The CPC manages an innovative pro forma that (a) levelizes net cash by varying the price in order to reduce cash flow challenges and (b) ties returns to prevailing interest rates in order to protect projects against inflation

The third purpose of the CPC is to manage the pro forma. The pro forma describes the projected cash flows, net revenues and taxes over the life of the project and contains detailed financial data regarding the assumptions and estimates that drive the expected results.

The Pro Forma Levelizes Net Cash by Varying the Price

The pro forma is structured in a manner that levelizes net cash across years. This is achieved by requiring Manitoba Hydro to pay a variable price for the electricity it purchases from the project. The ability to levelize net cash has been documented on the C-BED web site (<http://www.c-bed.org>). The pro forma that has been created for this model includes deployment of that net cash levelization approach. The net impact over the ~20-year project life to Manitoba Hydro for levelized cash flow (i.e. paying a variable price) is of minimal impact to Manitoba Hydro, because the model uses Manitoba Hydro's discount rate in order to calculate the NPV of the electricity sold over the ~20-year power purchase agreement. The C-BED calculator is used successfully in Minnesota, so is not considered untested. The resulting net cash from year to year would then be relatively even, so shares can be bought or sold with relative accuracy of their true value, and the partnership can reduce the requirement to maintain a large reserve of funds for costs that vary by year. This approach ensures that the partnership retains the incentive to actively manage its investment, such as ensuring appropriate maintenance of the equipment and efficient operation of the CPC.

Figure 5 shows how the fixed price and resulting net cash are related to each other in the CPC pro forma under both the conventional fixed price scenario (dotted line) and using the variable price (solid line). The graph on the left shows how the variable price starts at \$0.13 in the first year, then increases to approximately \$.15/kWh in year 10 then dropping to approximately \$0.09/kWh in year 11 (this example simulates the variable prices that would be required in order to accommodate the higher payments in the first 10 years in order to pay off the 10-year loan). The graph on the right shows the impact of variable price adjustment on the net cash. Note that the upward slope of the variable price in the graph on the right reflects a constant net present value over time when using a discount rate of 8% for the NPV calculations. The third, lightly shaded horizontal line shows the present value of the net cash over the ~20-year period.

The details of the pro forma that describe this valuable innovation will be shared with Manitoba Hydro after this model is formally adopted by Manitoba Hydro and the Government of Manitoba.

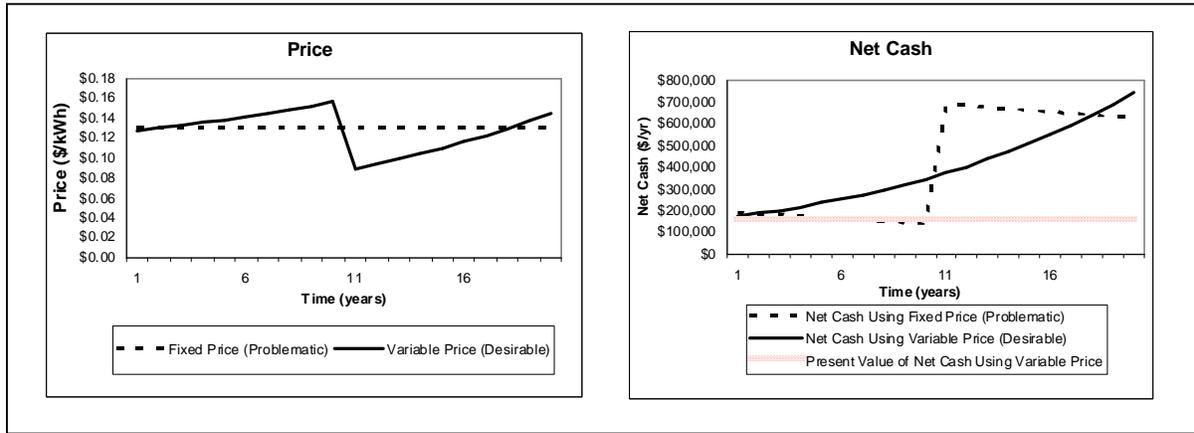


Figure 5. The pro forma's innovative variable price feature levelizes net cash. In this sample scenario, the price is higher in the first 10 years when the loan is active, then drops after the loan is paid.

The Pro Forma Ties Returns to Prevailing Interest Rates

Investors purchase shares based on the expected returns compared to the prevailing interest rate. With the Bank of Canada interest rate at 0.75%, 7% returns to the investors plus 5% returns to the communities (for a total of 12% returns) are considered acceptable relative to the risk this investment represents, and are expected to result in reasonable acquisition of equity to allow the initial project to proceed. However, if interest rates climb in future years, for example to double-digits, as they did in the late 1970s, an investment return of 7% represents a loss in real dollars to the investor compared to the returns that the investor could earn from a simple interest-bearing account at a bank. In that scenario, investors would seek to sell their CPC shares, resulting in a failure of the intended community power program goals. To mitigate this risk, the pro forma specifies that returns are to be tied to the Bank of Canada interest rate. Today's interest rate, at 0.75%, is tied to 12% returns to the CPC, which represents an 11.25% spread (12% - 0.75%). Each year, the rate of return is adjusted so that the 11.25% spread is maintained based on the prevailing Bank of Canada interest rate. This results in a safe investment for the overall community power program, while at the same time ensuring that Manitoba Hydro doesn't pay costs associated with the project's requirements to hedge against inflation.

EACH OF THE MODEL ENTITIES IN DETAIL

1. INVESTOR

"The **Investor** invests in the community power program by purchasing shares in the CPC. The Investor receives a return on his or her investment."

The investor is an individual resident living anywhere within the province of Manitoba, who purchases equity shares in the CPC and receives a return on that investment. The CPC ensures that the shares are RRSP-friendly (registered retirement savings plan), in order to provide a convenient investment vehicle for Manitobans to directly invest in the long-term future. The investor may sell shares at any time through the CPC, provided there is an active pool of investors-in-waiting.

Institutional investors are not allowed to purchase shares. This allows for greater participation of individual citizens of Manitoba, for whom the program is designed.

The following investor protections are built into the model:

- In the case of lower-than-expected returns in any specific year, the **community returns** are targeted for reduction before the investor returns are impacted. This results in more stable investor returns.

- The pro forma builds in inflation protection by indexing returns to the prevailing interest rate as set by the Bank of Canada. See the section titled “The CPC Manages an Innovative Pro Forma” for details.

The model is designed to encourage broad participation of investors with varying incomes. This is why the investments are to be RRSP-eligible TFSA-eligible.

2. LOCAL COMMUNITY POWER ORGANIZATION (LCPO)

“The **Local Community Power Organization (LCPO)** initiates the development of a community power project. It acts as the limited partner in a limited partnership with the CPC, and markets investment shares in the project to local community members. It represents the interests of the LCPO in the governance of the CPC by taking a seat on the CPC Board of Directors (one board seat per LCPO).”

The Local Community Power Organization (LCPO) initiates and organizes the project in the local community. The LCPO ensures that the local community supports the project and ensures that the project complies with the CPC requirements. If there are multiple LCPOs in various locations, different LCPOs may have differing structures from each other. One may be organized as a cooperative, while another may be organized as a First Nations Band, another as a special project of a local service organization, another as a project of a municipality, etc. The organizational structure is limited only by that which is required from the CPC perspective to ensure that the group is representative of the local community and that the long-term viability of the project is secured. If the CPC finds that the community has stepped outside of fiscally responsible management, it may put the project into “receivership” long enough to allow the community to transition the project to a restructured LCPO that meets CPC requirements.

The LCPO participates in governing the activities of the CPC by assigning one member of the LCPO to sit on the CPC Board of Directors.

The LCPO acts as the primary marketing mechanism in the local community for the project. It manages a structured, volunteer-based person-to-person marketing campaign in order to sell investment shares in the project to local community members.

3. COMMUNITY POWER COOPERATIVE (CPC)

“The **Community Power Cooperative (CPC)** provides centralized financing and investor services for community-based projects. It hires experts that create and manage the sale of equity shares to investors from across the province. It also provides investor relations services, completes tax reporting and responds to financial audit requirements for all LCPOs. It acts as the general partner in the limited partnership arrangement with one or more LCPOs.”

The CPC manages the equity needed to bring the project on line, secures appropriate financial and technical expertise to ensure financial and technical viability of the project, and fulfills fiscal and audit responsibilities for the partnership over the life of the project. The CPC also provides the mechanism for investors to buy and sell shares in the project. This function allows investment shares to be more liquid, which results in shares being more attractive to potential investors. In the case of multiple projects in the province, and in order to reduce investment risk and reduce transaction costs, all community power projects would be financially aggregated by the CPC.

On the technical side, the CPC provides the LCPO with guidance, develops and manages the pro forma for the benefit of the partnership, works with Manitoba Hydro to develop a queue process to determine whether an LCPO project gets developed, negotiates on behalf of the partnership with Manitoba Hydro with regard to interconnection and power purchase agreements, and leads the selection of the project developer on behalf of the partnership.

On the administrative side, the CPC acts as the primary point of communication between Manitoba Hydro and the LCPO, provides policy guidance for the overall community power program, disseminates appropriate information about the community power program, markets the community power program to potential investors, manages and responds to investor needs, and works to ensure overall program success. By

aggregating community voices, the CPC is expected to carry substantial access to decision-makers within Manitoba Hydro and within the provincial government.

4. PROJECT DEVELOPER

“The **Project Developer** contracts with the LCPO and CPC partnership and provides professional technical services to ensure the success of the community power project.”

The project developer is an independent developer who assists the CPC and LCPO partnership with technical and project management aspects of the project. The project developer is paid through a contract arrangement negotiated with the partnership of the LCPO and CPC.

The project developer is an established expert in wind power development projects, who recommends and deploys appropriate technology solutions based on the requirements provided by the partnership. The project developer has input into the pro forma, selects and secures the turbines, equipment and contractors, and develops and delivers on a detailed project plan. The project developer may provide a long-term maintenance plan depending on the nature of the relationship negotiated with the partnership.

The partnership is responsible for ensuring that the engagement process for the developer is open and transparent, and that all information about the specific project and the community power program is provided in a manner that ensures long-term viability for the overall community power program.

5. BANK OR CREDIT UNION

“The **Bank or Credit Union** provides loans for a portion of the project capital costs, expected to be between 50% and 75% of the capital costs of the project.”

The bank or credit union provides a conventional loan to the project, usually for between 50% and 75% of the project’s capital costs. As the provider of the debt, the bank or credit union has a vested interest in ensuring that both the business plan and the pro forma result in healthy, long-term viability for the project that is to be funded. The detailed financial review conducted by the bank or credit union acts as a financial control for the project that benefits the investors and the overall program.

6. UTILITY

“The **Utility** (Manitoba Hydro) allows interconnection of the community power project to the power grid, and purchases the power through a 20-year power purchase agreement that results in a reasonable financial return to the project.”

The utility, Manitoba Hydro, works with the CPC and the project developer to provide interconnection and to purchase power from the project through a power purchase agreement for the project.

Manitoba Hydro engages with the CPC and LCPO partnerships through guidance from the Government of Manitoba. The overall program provides a framework that minimizes risk and provides a reasonable investment return for the renewable energy project, using concepts that are described in the section titled *The Model Reduces Risk and Increases Reward*.

One of the features of the program designed to provide stability is to index returns to inflation. This is accomplished through the pro forma and will result in lowering risk to the investors, even in times of high inflation, when a fixed ~20-year return would result in diminished real returns for investors and could therefore cause a sell-off of shares. Manitoba Hydro takes a higher risk in that if inflation increases substantially, the price it pays to the partnership for the power it purchases increases accordingly. This is an acceptable risk for the crown corporation to take for a program that is designed to improve rural economic development in the province.

Manitoba Hydro also identifies to the CPC which geographic regions or specific substations may have interconnection challenges or positive attributes in order to provide the CPC and LCPO partnerships with early information about specific project viability. This feature serves to reduce unnecessary investment in non-viable projects.

7. RATEPAYER

“The **Ratepayer** purchases renewable community-based power as part of the overall energy supply mix.”

The ratepayer pays for the overall electricity mix provided by Manitoba Hydro, which includes both the community power portion and the conventional power portion. The ratepayer will be made aware, to the extent reasonable by the partnership and Manitoba Hydro, of the amount of electricity provided by community power as well as its specific contributions in the Province of Manitoba compared to the overall amount of renewable and non-renewable power. The ratepayer is entitled to know the overall cost of electricity being produced by the community power program, and its impact on the ratepayer’s bill.

This model is not expected to have any appreciable impact on electricity rates compared to other independent power producer (IPP) models for wind power production that are being deployed in Manitoba. The costs are not expected to be significantly higher than proprietary IPP costs for equivalently-sized projects, and the transparency of this model allows ratepayers to see the regional and local costs and benefits of this model over time.

Returns provided to communities and investors can be viewed as a way of keeping our rural communities healthy in exchange for the substantial value that those same rural communities provide the ratepayers of the province in the form of the renewable energy resource.

BENEFITS OF THE MODEL

THE MODEL MERGES RURAL ECONOMIC DEVELOPMENT WITH RENEWABLE ENERGY DEVELOPMENT

An integrated, sustainable approach to electrical energy production and consumption is necessary over the long term, and is made possible through use of this community power model. Figure 6 shows how the relationship between production, consumption and local economic development works. Starting at the top of this oval, a collection of 1000 households in a rural municipality in Manitoba invest \$2,500 each and receive a reasonable return on that investment. If those 1000 households pool their investments, that gives them \$2.5 million to invest in their future in some manner. \$2.5 million is enough equity at a ratio of 1/3 equity to 2/3 debt, to create a \$7.5 million community-owned wind project. That \$7.5 million wind project, based on today’s technology and economics, will have a nameplate capacity of approximately 3 MW and will produce roughly 9000 MWh/year. At Manitoba’s average household power usage rate of 9 MWh/yr, that 3 MW project produces enough power for the same 1000 households that invested in the project in the first place.

The investors’ homes are not necessarily the same specific homes that would receive the power from the community power project. However, because the energy produced from the community power project displaces whatever energy source would normally be tapped (e.g. a Manitoba Hydro dam), investors located anywhere in the Manitoba Hydro service territory (i.e. investors located anywhere in the entire province) would realize the benefit of their home energy use being tied to the specific community power project in which they have invested.

THE MODEL REDUCES RISK AND INCREASES REWARD

In general, risk and reward go hand in hand. Figure 7 shows the risk-reward continuum with the low risk and low reward shown on the left side, and the high risk-high reward shown on the right side. From the community's perspective, in considering wind development, the corporate-owned model is the lowest risk and lowest reward option. In this low-risk, low-reward model, Manitoba's communities solicit outside developers to bring a project to the community. The primary income in the low-risk, low-reward model are local taxes and land lease payments to the local landowners. It involves no direct ownership and represents easy income for a limited (and lucky) number of landowners.

On the other end of the continuum is the community-owned project developed from scratch. In this scenario, the local community has the potential to receive relatively high rewards, but also takes on significant responsibility and risk. The small triangle pointers describe the risk and reward separately, because there are mechanisms that can increase the reward and decrease the risk, such as government policy (e.g. allowing share capital cooperatives to exist as a corporate entity), Manitoba Hydro policies (e.g. accept a ~20-year power purchase agreement that levelizes net cash for communities), and non-government mechanisms (e.g. deployment of the CPC that assists in technical and administrative details). This model was developed with a focus on features that are designed to minimize risk and maximize reward from the perspective of Manitoba communities.

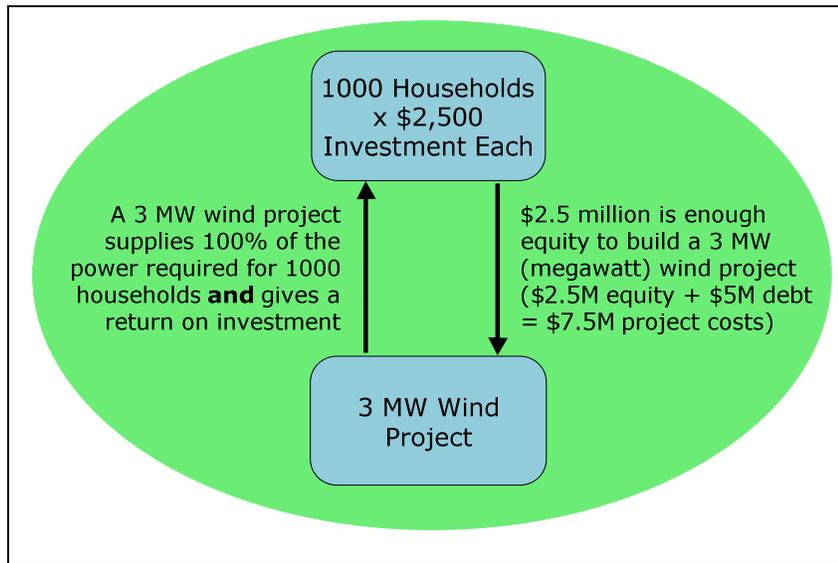


Figure 6. This flow diagram describes an integrated approach to community power that includes power production, power use, and local rural economic development.

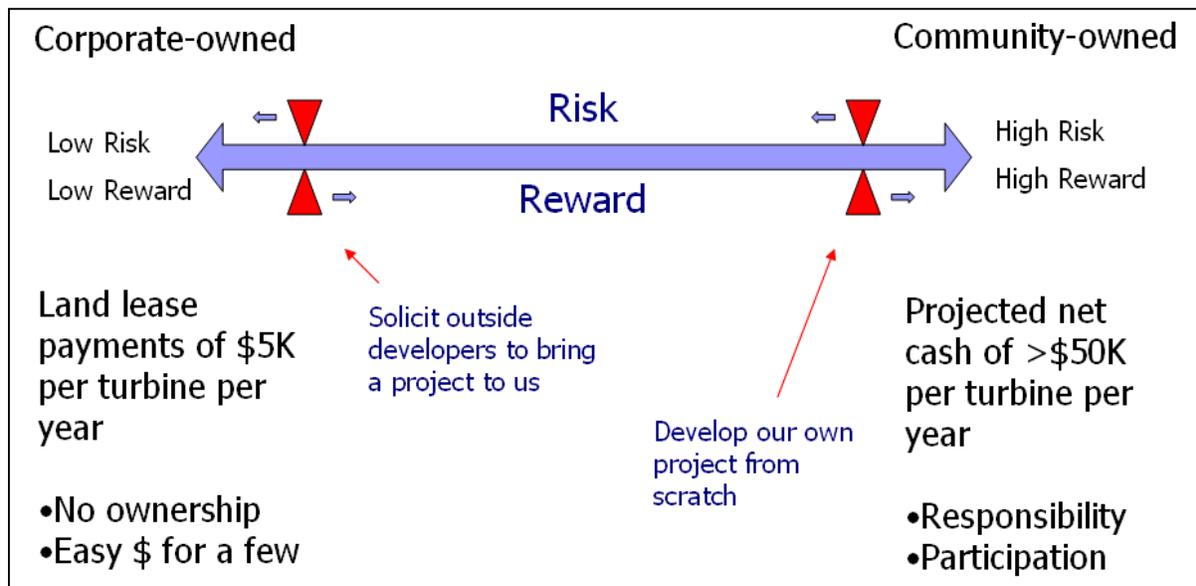


Figure 7. Risk and reward go hand in hand. This model describes ways to reduce risk and increase reward in a manner that results in a vibrant community power program in Manitoba.

As a crown corporation, Manitoba Hydro is in a unique position to partner with communities throughout Manitoba to work toward a risk-reward balance that provides appropriate benefits for all parties. This model provides a mechanism to find that risk-reward balance by leveraging the shared and transparent pro forma.

THE MODEL IS HIGHLY SCALABLE

The model is designed to work well for deployment of both a single, small (~3 MW) community power project and multiple larger community power projects over time. Manitoba Hydro indicated a desire to limit the overall community power program in Manitoba to 3 MW (2 turbines) for the time being, even though the provincial government has publicly committed to a community power program of 50 MW.² The scalability of this model accommodates either scenario. The province and Manitoba Hydro could choose to launch a single initial project, and stop adding new projects at that point or, after certain criteria are met from the initial project, commit to additional projects over time, thus ensuring that the overall program is kept within identified controls.

We recognize that policies change, government priorities change, and external imperatives, such as climate policies change. In such an environment, a high degree of flexibility and scalability is important.

In the simplest case in which Manitoba's entire community power program consists of a single 3-5 MW project, the CPC forms only one partnership with one LCPO and that partnership manages the single ~20-year project. The ongoing costs of operating the CPC are included in the pro forma for the project and are therefore included in the negotiation of the pricing for the ~20-year power purchase agreement between Manitoba Hydro and the partnership. The costs of operating the CPC are not significantly higher than if the activities of the CPC were rolled into the LCPO, and with a separate CPC, the significant advantages of growing the program to future projects are retained, specifically the transparency, checks and balances, and community returns.

If, at a later date, the Manitoba government and/or Manitoba Hydro agree to grow the program to more than one project, as shown in figure 8, the single CPC would form limited partnerships with multiple LCPOs in which the single CPC acts as the general partner for all projects and the LCPOs act as limited partners for their respective LCPO projects.

The first project would not be appreciably more expensive than competing community-based approaches, because the activities that are assigned to the CPC (i.e. providing technical and financial expertise, establishing the ability to buy and sell shares, and developing and maintaining the project's pro forma) are required for every community-based renewable energy project anyway, and there's little that is inherent in the model that increases those operational costs beyond what a competing community power project would incur.

As more projects are added, the overall price per kWh for each subsequent project could be lowered, because many of the fixed costs that are required to operate the CPC are already covered by the first project. The transparency of the model allows Manitoba Hydro to understand where the operational costs are incurred, and therefore allows all parties to understand the level at which the price for subsequent projects needs to be set in order to achieve the overall community power program's financial goals. Because of this, the model actually provides a way to *lower* the per kWh costs as the community power program grows.

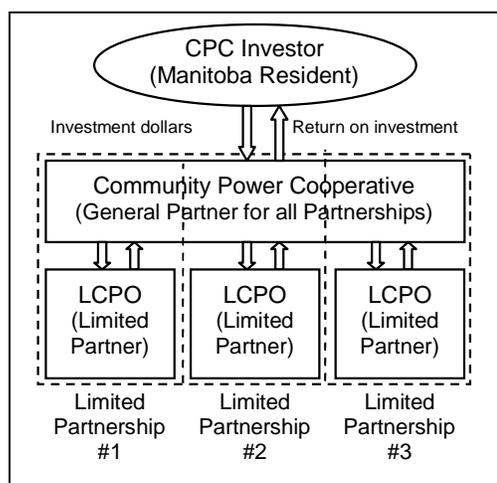


Figure 8. The limited partnership structure allows multiple LCPOs to partner with the CPC

² See <http://www.gov.mb.ca/chc/press/top/2005/11/2005-11-21-01.html> for the 2005 press release that describes Manitoba government's commitment to community power: "In addition to the 1,000 MW, it is expected that another 50 MW will be set aside for the development of smaller, community-based projects."

THE MODEL OPERATES WITH A HIGH DEGREE OF TRANSPARENCY

The CPC charter is to be set up in a way to ensure that it chooses its board of directors through a transparent process, publishing meeting minutes, posting detailed operating costs publicly, committing to annual audits, and providing LCPO representation on the board of directors. The pro forma is shared with Manitoba Hydro and with the government of Manitoba in order to ensure a high degree of confidence by the investors and stakeholders that the overall program runs efficiently and that the investment dollars are safe.

The transparency also provides the opportunity for stakeholders to “tune” the program over time. Investors may suggest ways to streamline investor relations in order to maximize their returns, for instance. Or Manitoba Hydro may leverage technology improvements such as a smart metering program in a community power project location in order to observe conservation improvement potential. Through transparency, a variety of stakeholders will engage each other toward a more successful community power program.

Finally, the transparency ensures that there’s an early warning system in place should the program experience fiscal challenges. The transparency discourages the hiding of important information and allows for mitigating activities to occur in a timely fashion. This will help prevent costly public-private investment mistakes.

Here are some examples of how this transparency benefits the overall community power program:

- By sharing the pro forma with Manitoba Hydro and the government of Manitoba and the Sponsor, all vested interests work toward a common goal rather than in a competitive win-lose environment. This results in an efficient program overall.
- A clause in the partnership agreement between the CPC and LCPO ensures that the local community can choose not to renew the partnership agreement after the ~20-year power purchase agreement ends, should the local community wish to return the site back to greenfield state. This protects communities in the long term from unwanted projects.

THE MODEL PROVIDES CHECKS AND BALANCES

The use of a partnership arrangement ensures strong oversight of the LCPO. For example, if the LCPO encounters local community political upheaval that results in significant dysfunction that may otherwise threaten the viability of a project, the CPC has the ability to step in and place the project in a form of “receivership” until the LCPO can be reformed to successfully operate. Because the LCPO maintains a seat on the board of directors of the CPC, the CPC is less likely to trample on local community sensitivities. In this manner, checks and balances are maintained for both organizations. Also, the Sponsor, through its fiscal vested interest, retains an incentive to ensure that the CPC and LCPO operate in a fiscally responsible manner. Finally, through the transparency provided by the model, the investors, who are elected to the CPC board, have some level of control over the operations of the CPC.

The CPC holds title to the capital equipment in the partnership. This mechanism ensures that the assets remain under investor control for the duration of the ~20-year power purchase agreement term. Phase 9 of the project (setting aside financial resources to decommission the project and turn the location back into greenfield state) ensures that the community has sufficient resources to remove remnants of the project should it choose to return the site to greenfield state at the end of the ~20-year term. If the local community would like to partner with the CPC and negotiate a new power purchase agreement with Manitoba Hydro for another term, it may do so without being pressured by the terms of the previous contract for any reason.

THE MODEL REDUCES THE SIGNIFICANCE OF SPECIFIC LOCATION

Through the CPC, the specific location of projects matters little. For example, if Manitoba Hydro accepts only one project when multiple projects seek participation, the communities associated with all of the unsuccessful projects have an opportunity to invest in the successful project as though the project were locally sited.

Investors do not need to live in a location with a strong resource (e.g. strong wind regime) to fully invest in the community power program, since full investment participation is allowed from any Manitoba resident in any location. For example, someone from Thompson can invest in a project in Brandon and receive all of the individual and community financial benefits as though the project were local to Thompson. This feature allows investors from throughout the province to participate in community power, even if the wind regime in his or her particular geographic region is not suitable for development of a local project. This feature may also allow the program to expand into other areas such as biogas, biomass, and solar, that may have different resource profiles in different geographic areas compared to wind.

THE MODEL BECOMES AN IMPORTANT SOURCE OF RURAL ECONOMIC DEVELOPMENT

As shown in figure 9, a growing portion of the net income farmers receive comes from non-farm income. The medium shaded section in the lowest portion of the graph shows the net income produced by farming. The light thin strip in the middle called “Program Payments” describes the government subsidies, and the graph shows that for the time periods described, farmers depend on government subsidies in order to achieve positive income. The dark section at the top of the graph shows non-farm income. The overall non-farm income is significantly higher than is healthy for a rural economy, and explains why we see depopulation in our rural communities. The model provides a way for farming communities to regain vibrancy by providing a stable source of income for farmers and rural communities.

Through the community returns mechanism of this model, local rural investment dollars are tied to local rural economic development.

THE MODEL LEVERAGES SHARED EXPERTS TO REDUCE THE RISK FOR ALL INVESTORS

Assuming more than one community power project gets built, this model provides value in the form of shared experts. Projects “going it alone” produce highly variable success profiles, and thus represent an increased risk for all investors. This model, on the other hand, ensures that key technical and financial experts are centralized. This, in turn, allows higher investor confidence and lower risk for all investors in all projects.

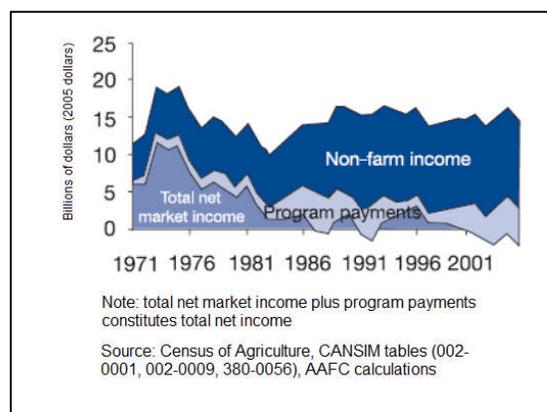


Figure 9. Farmers are increasingly dependent on non-farm income.

THE MODEL ASSISTS THE TRANSITION TO ENERGY SUSTAINABILITY

We import large amounts of non-renewable fossil fuels for transportation, heating, and industrial processes, such as fertilizer production, all of which are critical to Manitoba’s long-term economic health (see figure 10). In comparing the amount of clean, renewable energy leaving our local communities to the amount of non-renewable fossil fuel energy entering our communities, we can see that we have significant challenges in our future. It is not a question of if we will run out of fossil fuels. It is only a matter of when. It is therefore important to consider how we can begin to transition our Manitoba economy to clean forms of energy use. Changes in technology and activities associated with this transition are expected to be significant. For example, we will likely see the widespread deployment of plug-in electric vehicles in the future that will require significantly larger amounts of renewable energy. At the same time, the jurisdictions to which we export clean electricity, for example, Minnesota, will similarly be seeking increases in the purchase of Manitoba’s clean hydro power.

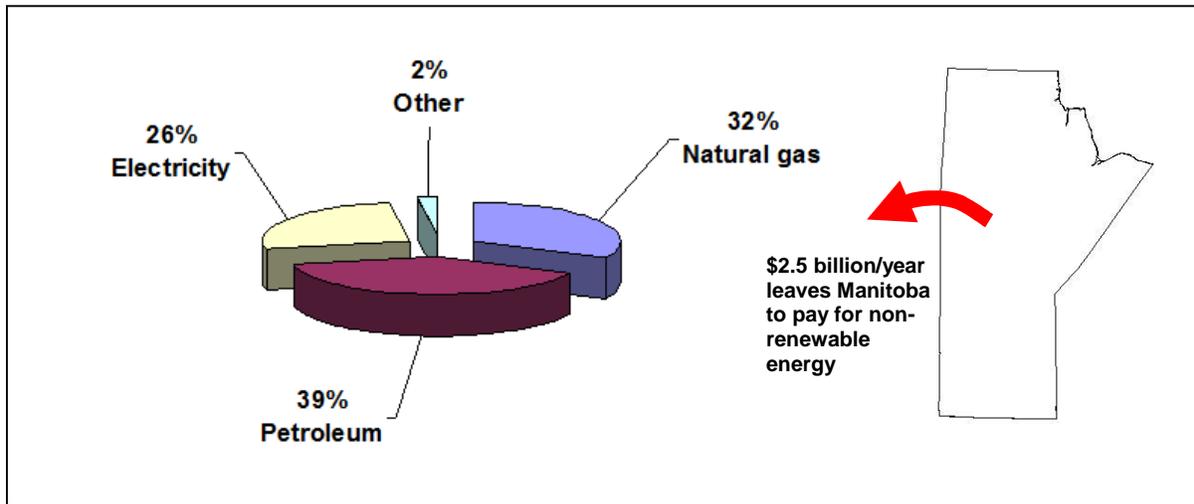


Figure 10. Two-thirds of Manitoba's energy comes from non-renewable resources, such as natural gas and petroleum. This represents \$2.5 billion that leaves our local communities each year. (Source: Manitoba Science, Technology, Energy and Mines)

It is not unreasonable to expect that renewable energy demands will exceed existing sources of hydro power, and further development of some other form of renewable energy, such as new hydro power or new wind power, will need to be utilized.

This need for significantly reduced carbon and the need for new sources of renewable energy are not in the distant future. For example, Manitoba will need to conform to the Federal government's recently-announced initiative in which *all* Canadians are being asked to cut carbon emissions by 17% by 2020. That initiative is the first stage in a transition away from non-renewable fossil fuels that will be necessary for Manitoba over the long term. The Manitoba government has already taken an important leadership role toward carbon reduction by participating in the Midwestern Greenhouse Gas Accord 2007, and by participating in the Western Climate Change Initiative.

Utilizing Manitoba's wind resources is an important component of Manitoba's energy future. This model provides a mechanism that involves our communities in accomplishing that conversion in a manner that results in a supportive, community-oriented transition. By harvesting wind power in our local communities, we can ensure that a larger portion of Manitoba's hydropower can be exported, thus realizing maximum benefit from the export market. Locally sited community-based wind development may represent a win-win situation for both Manitoba Hydro and Manitoba communities.

CHALLENGES OF THE MODEL AND SOLUTIONS TO THOSE CHALLENGES

CHALLENGE: MANAGING LARGE NUMBERS OF INVESTORS IS COMPLICATED, THANKLESS, AND EXPENSIVE

The Toronto WindShare experience confirms that the management of large numbers of investors is complicated, thankless, and expensive. This includes management of annual mailings, coordinating and hosting annual member meetings, answering phone and email inquiries associated with memberships, and maintaining records. This overhead directly absorbs dollars that would otherwise be distributed to members as returns on their investment.

SOLUTION

The migration of membership responsibilities to the CPC ensures that efficiencies of specialization and economies of scale can be built into the system. The staff of the CPC will have incentives to leverage automation and implement measures to minimize the transaction costs, because the fewer dollars that are spent on the CPC, the more dollars that go to communities and investors. It is expected that centralized software will be implemented for information dissemination and owner relations in order to maximize investor benefits. Manitoba's CPC is expected to coordinate with other jurisdictions with similar community power programs, such as Ontario, New Brunswick, etc., on an approach to technology implementation and investor relations that shares back office solutions where it makes sense, for example, through the coordinated development of a single web-based interface for all investors in all jurisdictions.

The Toronto Renewable Energy Co-operative (TREC) is actively working on a set of tools to assist community power investment in Manitoba and Ontario. In early 2010 a TREC proposal referencing EEC's direct participation was funded for \$200,000 by the federal government (through the Co-operative Development Initiative). This grant has reduced specific costs that Manitoba community power advocates would have had to incur for the development of the back-end tools for deployment of this model and was taken into consideration in arriving at the budget in appendix A of this model. The next section describes this initiative in more detail.

CHALLENGE: ESTABLISHING THE CPC IS EXPENSIVE

The initial costs and ongoing operational costs associated with deploying the CPC are shown in Appendix A. Manitoba Hydro has conveyed to us that it believes that our model is expensive:

Manitoba Hydro is interested in community-based wind projects; however, the economics of such projects make it difficult to consider a program as extensive as the model you've presented ... We are working on a community wind pilot program with the intent of establishing community wind test sites. Due to the high cost of community wind projects, this pilot program will likely be limited to 3 MW of community wind in total.

- Letter from Bob Brennan, Manitoba Hydro CEO, October 6, 2008

SOLUTION

The high costs that differentiate community wind projects from conventional wind projects are associated primarily with economies of scale. A 2004 American Wind Energy Association study showed that a 3 MW project costs nearly 40% more per kWh of electricity than a 51 MW project.³ The high dollar fixed cost elements that are common to all community-based programs include turbine maintenance, lack of a discount on volume purchases of turbines, crane costs, legal costs, accounting costs, investor share management, pro forma development, financial management, annual tax reporting, and audit management. *Important: these costs will have to be incurred for all community power programs, including the 3 MW option preferred by Manitoba Hydro.*

We agree with Manitoba Hydro that an extensive program is high risk. We therefore recommend deploying the program using a phased approach. For the pilot phase, our proposed approach is as cost effective as other available options, and has the following significant advantages over other pilot program options:

- This model lowers the costs for subsequent projects through the centralization of key services, such as pro forma development, financial management, investment transactions, investor relations and annual tax reporting.
- This model lowers the risk of both the pilot program and subsequent projects by engaging professional services (accounting, legal and project development services) in a transparent framework that allows oversight by Manitoba residents, Manitoba Hydro and the Government of Manitoba—“fly by night” proposals will not likely receive the traction that they might receive in a less structured environment.

³ See <http://www.awea.org/pubs/factsheets/EconomicsofWind-Feb2005.pdf>.

- This model allows persons from anywhere in the province to invest in a specific project, which greatly expands the opportunity for investment for both Manitoba residents and the project developers.

Manitoba Hydro needs to consider the long-term view and therefore the significant long-term financial advantages of a centralized CPC.

To further reduce costs and improve efficiency, EEC also has initiated a formal relationship with the Toronto Renewable Energy Co-operative (TREC) to develop a suite of back office tools to centrally manage cooperative-based community power investments from multiple projects. TREC is pursuing a solar project and a wind project, both of which require the management of large numbers cooperative-based investors. The tools that are being developed include both software and processes (escrow management, sale of investment shares, financial reporting, audits, etc.). TREC intends to make these tools available to cooperatives throughout Canada, starting with a significant number of cooperatives that have already been awarded permission to build projects under Ontario’s feed-in tariff program. Rather than “reinvent the wheel”, EEC has taken the initiative to work with TREC in order to ensure that to the extent possible the tools that are developed in Ontario are made to work with Manitoba’s community power program. This initiative represents significant cost savings and risk mitigation for deploying Manitoba’s community power program as described in this model. Laurence Lafond is a TREC board member and is also on the steering committee of TREC’s Community Power Investment Platform project team, which is scheduled to develop and deploy the tools starting in 2011.

THE ROLE OF GOVERNMENT

The Manitoba government plays an important role in the overall governance of this model:

- The Government of Manitoba, through the Manitoba Securities Commission, supports the formation of the CPC as a legal entity that is able to sell shares to the public through a cooperative-based offering statement.
- The Government of Manitoba sets expectations for Manitoba Hydro to develop Manitoba’s community power program with the CPC and LCPOs as described in this document.
- The Government of Manitoba appoints an impartial Community Power Oversight Committee to direct Manitoba Hydro to deploy the Manitoba community power program as described in this document. The Community Power Oversight Committee acts as an arbiter between the CPC and Manitoba Hydro as necessary over the life of the Manitoba community power program.

In general, the provincial government provides guidance to Manitoba Hydro as a crown corporation. Because wind turbines extract a natural resource from Manitoba’s rural areas, the government has a responsibility to ensure that renewable energy producers, Manitoba Hydro and ratepayers send an appropriate portion of benefits for that natural resource back to the rural communities from which the resource originated.

COSTS OF THIS MODEL

COSTS TO LAUNCH AND OPERATE THE CPC

Appendix A to this model describes the specific costs associated with launching the CPC. The ongoing operational costs for the CPC are included in the pro forma for the initial project. The costs to Manitoba Hydro for the initial pilot project are shown below. It is important to note that all projects subsequent to the first project will charge less per kWh for the power to Manitoba Hydro because the fixed costs associated with operating the CPC are applied only to the first project.

The fixed costs associated with initially deploying the CPC argue for a larger pilot project, while conventional aspects of a pilot project program (e.g. start small to work the kinks out of the system) argue for a smaller pilot

project. Because of this fixed cost requirement, the smaller the pilot project, the higher the costs are per kWh to Manitoba Hydro.

AVOIDANCE OF TAX SHIFTING RESULTS IN MANITOBA HYDRO PAYING A HIGHER PRICE

One of the important intended features of this model is that it encourages broad participation of individual investors from across Manitoba, i.e. lower and middle income earners must not be excluded from participation compared to high income earners. Canadian tax laws generally favour the pass-through of tax benefits to investors for renewable energy projects (examples include the Canadian Renewable and Conservation Expense [CRCE] and Capital Cost Allowance).

The model specifies the use of the partnership arrangement partly to allow the flexibility for the possible future use of the pass-through of tax benefits to investors (conventional corporations do not allow the pass-through of tax benefits while partnerships allow such tax benefits to be passed to the individual investors, in this case the cooperative members). Unfortunately, these flow-through tax benefits make the investment less appealing to lower and middle income investors who cannot take advantage of them (and to whom the benefits of community power programs should be equally targeted); only relatively high income earners can leverage the maximum tax benefits that may be required to make a project viable.

There is an additional philosophical downside to the pass-through of tax benefits. Specifically, tax benefits shift the burden of some costs from the ratepayer to the taxpayer, which raises the issue of tax fairness. When viewed in the context of both taxpayers and ratepayers, in a system that leverages tax benefits, taxpayers are, in effect, subsidizing ratepayers. Foregoing the pass-through of tax benefits results in ratepayers paying the full costs of the electricity produced. The flexibility of our model accommodates either scenario.

Further analysis of the tax impacts of our model will be completed as part of the deployment of the pro forma with the first project.

ESTIMATED PRICE PER KWH TO MANITOBA HYDRO

The pro forma developed with this model uses a set of assumptions in order to derive the required price that Manitoba Hydro must pay in order for the power produced to make the community power projects viable. Here is a sample set of assumptions and the resulting price:

- Two turbines, each 1.5 MW, for a total project size of 3 MW
- A power purchase agreement for 20 years
- Capital costs \$7,500,000 (\$2,500 per kW)
- A turnkey vendor support contract for the life of the turbines (priced at 1.5% of capital costs in the first year, indexed to inflation of 2% per year in subsequent years)
- 67% debt and 33% equity financing
- 7% interest rate on the debt
- 6.9% cost of capital used for NPV (net present value) calculations
- Professional fees (accounting and legal) of \$1,000 per year
- CPC fees of \$80,000 per year
- Loan term of 10 years

According to the model's pro forma, the above assumptions result in a price to Manitoba Hydro of \$0.13 per kWh. "What if" analyses can be performed using the model's pro forma and adjusting a variety of inputs in order to derive various associated prices. The opportunity to run a variety of scenarios will be available to Manitoba Hydro, should there be interest.

REQUEST FOR PROPOSAL (RFP) APPROACH CREATES CHALLENGES FOR COMMUNITY POWER

Manitoba Hydro has expressed an interest in selecting Manitoba’s community power projects using a Request for Proposal (RFP) approach. We prefer a “Collaborative Approach”, in which community power program criteria are described up front, and communities actively participate in the process. The table below describes the two approaches.

Under the collaborative approach, communities have the opportunity to communicate with other communities and potentially engage in self-selection of projects. Because in this model the specific location of a project matters little, as described in the section titled “The Model Reduces the Importance of Specific Location”, the self-selecting process for communities is expected to be far less controversial than if communities were competing against each other in a simple RFP approach.

More information about the collaborative approach is described in the “Next Steps” section of this model.

Area of Concern	RFP Approach for Selecting Projects (Manitoba Hydro is Considering)	Collaborative Approach for Selecting Projects (Preferred CPC Model)
<i>Method by which specific projects are chosen</i>	Projects would be chosen by Manitoba Hydro through a non-transparent process. The results would likely be perceived by communities as arbitrary, resulting in overall community concern regarding Manitoba’s community power program.	Projects would be chosen by Manitoba Hydro through a transparent, rules-based gating process as shown in the “Next Steps” section of this model. All communities will have participated, and will have had the opportunity to understand why a specific project proposal was or wasn’t successful.
<i>Cost</i>	Communities compete against each other in a “winner takes all” RFP approach. All communities that participate pay high up-front costs, because each community must develop a detailed proposal from scratch and in isolation from other communities against whom they are competing. Because all communities except the winning community have no way to recoup the significant financial (and volunteer time) costs, the entire community power program is inefficient and expensive.	Communities coordinate with each other and share information based on a set of explicit ground rules. The costs to communities that don’t get a project built locally will be minimized, because the specific project’s standing in the competition relative to the rules will be clear early in the process.

MANITOBA HYDRO IS UNIQUELY AND POSITIVELY SUITED FOR THIS MODEL

As a crown corporation, Manitoba Hydro may give some priority to public benefit. This results in an excellent environment in which to launch a community power program. Also, because Manitoba Hydro manages generation, transmission, distribution, and retail sales, it can consider the total system costs and benefits of any new development, which is different than, for example, a jurisdiction in which one organization seeking to build generation capacity relies on a different party for transmission and/or distribution.

WIND AND HYDRO AS COMPLEMENTARY ENERGY SOURCES

Manitoba's power supply is highly variable, depending on weather conditions that affect water levels. Electrical supply to Manitoba customers in the recent past varied from a high of 37.6 TWh (2006) to a low of 19.3 TWh (2004), resulting in net income that varied from \$420 million (2006) to -\$428 million (2004). Due to the wide variability of water flows in our rivers from year to year, wind in general complements hydro power.

ENERGY NEIGHBOURHOODS

Developing a strong community program as described in this document will provide Manitobans with a closer connection to our power use. Through deployment of community-based, distributed generation, our rural communities have a unique opportunity to connect the concepts of electricity supply and electricity demand that they would not otherwise have. We believe that measureable improvements in conservation and efficiency will result from the deployment of local sources of renewable energy.

The connection between supply and demand can be further enhanced by community decision-making based on the substation to which each local resident belongs. For instance, if a cluster of two turbines is sited in local rural municipality's substation, then the investors who live in the geographic area defined by the boundaries of that substation's footprint form a logical grouping of "energy neighbours". Those energy neighbours, for the first time, have the opportunity to understand the wind conditions in which the energy neighbourhood to which they belong is exporting power to the grid compared to when the same energy neighbourhood is importing power from the grid. This connection between supply and demand allows the energy neighbours to challenge themselves toward developing a more carbon neutral lifestyle. A similar concept is being discussed in the Northeastern US, initiated by the US EPA, called the *Community Energy Challenge* (<http://www.epa.gov/NE/eco/energy/energy-challenge.html>) in which communities (energy neighbours) are being challenged to cut their carbon emissions *as a community*.

In Manitoba, these energy neighborhoods could be divided up by school divisions throughout the province. Energy use and sustainable development could be taught to our youth and communities through the education for sustainable development initiative which is recognized by world governing bodies like the United Nations (see <http://www.unesco.org/en/esd/> for more information).

NEXT STEPS

The emerging Local Community Power Organizations (LCPOs) in Manitoba, Manitoba Hydro and the Manitoba government should work together to launch the CPC according to the budget that has been developed in Appendix A. The specific next steps are as follows:

1. The Government of Manitoba and Manitoba Hydro formally support deploying the community power program as described in the model.
2. The Government of Manitoba appoints a Community Power Arbitration Committee whose sole purpose is to act as a binding arbitrator between the CPC and Manitoba Hydro as necessary to ensure the success of the Manitoba community power program as described in the model.
3. The emerging LCPOs establish the volunteer Board of Directors for the CPC.
4. The CPC Board of Directors raises the required funds to launch the CPC as described in Appendix A of the model.
5. The CPC Board of Directors develops the charter and bylaws for the CPC, consistent with the content of the model.
6. The CPC Board of Directors hires (or contracts) the Managing Consultant, who acts as the "Executive Director" for the CPC.
7. The CPC, through the Managing Consultant and under the direction of the CPC Board of Directors, manages the detailed pro forma that is consistent with the elements described in the model, consulting

with financial and legal experts as necessary and secures Manitoba Security Commission approval for the CPC to sell shares as described in the model.

8. The CPC and Manitoba Hydro jointly review the pro forma and ensure that the needs of the investors and Manitoba Hydro are met.
9. Manitoba Hydro publishes the criteria it intends to use in the selection of the initial project location. The CPC is invited to comment on the criteria.
10. Manitoba Hydro publishes a general invitation for all LCPOs to submit a brief (1-2 page) description of one or more proposed initial projects. All submissions would be made public.
11. Manitoba Hydro reviews the submissions and publishes its initial comments on all proposals, specifying which proposal it is likely to pick and the reasons for its position.
12. The LCPOs provide additional information to Manitoba Hydro about the specific initial proposed projects in order to assist Manitoba Hydro in making its final decision. Manitoba Hydro hosts at least one public meeting at which participating LCPOs may provide additional information for final consideration.
13. Manitoba Hydro makes the final determination as to which project gets selected for the initial project.
14. The CPC ensures that each LCPO that participated in the process receives equal priority opportunity for its community members to participate as investors in the initial project.
15. The LCPO/CPC partnership negotiates a power purchase agreement with Manitoba Hydro.

After the initial project is built, the initial project funds the CPC operations through the sale of electricity to Manitoba Hydro as specified in the pro forma. No further direct public or foundation financing of the CPC is required. A publicly-available review of the initial project's progress (risks, constraints, and issues) would be provided by the CPC and LCPO partnership quarterly until at least a year after the initial project goes live, and would occur annually after that.

ABOUT US

In 2005 the concept of community power in Manitoba was created when Laurence Lafond, Dan Mazier and Carl Cunningham decided to reply to Manitoba Hydro's Expression of Interest for wind development in the province. The EOI acted as a catalyst to let us move forward on idea to where we are today.

In 2006, Elton Energy Cooperative (EEC) was formed in the Rural Municipality (RM) of Elton, Manitoba, with a mission to deploy community-based renewable energy projects. We sought to develop projects in a way that would ensure long-term rural economic development and community participation. We believed that the delivery of renewable energy would be most beneficial if communities worked cooperatively with each other rather than competitively against one another. Our cooperative was based therefore on the principles of transparency, cooperation, and outreach, and these principles were written into our vision and mission statements. We received strong local community support for our approach.

In 2007, we received a grant from the federal government's Cooperative Development Initiative to research the feasibility of developing a cooperative-based renewable energy project in Manitoba. That funding allowed us to host a workshop in January 2008 that brought together North America's best known experts in community-based energy development from British Columbia, Quebec, Minnesota and Ontario in order to develop a "best concepts" approach for community power in Manitoba that leveraged what was known in other jurisdictions.

In 2008, we refined our model, receiving significant in-kind support from Manitoba Agriculture, Food and Rural Initiatives (MAFRI). We met multiple times with Manitoba's Science, Technology, Energy and Mines (STEM), with the CEO of Manitoba Hydro, with Manitoba Hydro's distribution staff, with the First People's Economic Growth Fund, and with numerous communities throughout Southwestern Manitoba, including the Brandon City Council, the Melita Area Economic Development Corporation, the RM of Blanshard, the RM of Sifton and the Town of Oak Lake. We also secured formal support for our model from Assiniboine Community College (ACC), Keystone Agricultural Producers (KAP) and the Association of Manitoba Municipalities (AMM).

In 2009, we developed a brochure describing our model (available on our web site), and we introduced our model to a wider audience, speaking at the AMM annual meeting, Ag Days, Capturing Opportunities Forum, and at ACC's Prairie Innovation Forum.

In 2010, we met with the staff of Manitoba Housing and Community Development and with the Housing and Community Development Minister Kerri Irvin-Ross. We also strengthened our business relationship with the Toronto Renewable Energy Co-operative (TREC) and continued to refine the model based on input received.

More information about Elton Energy is available at <http://www.eltonenergy.org>.

ACKNOWLEDGMENTS

Special thanks to the following organizations that have strongly supported community power and from which many concepts in this model are derived:

Manitoba Sustainable Energy Association (www.mansea.org)
Toronto Renewable Energy Co-operative (www.trec.on.ca)
Ontario Sustainable Energy Association (www.ontario-sea.org)
Minnesota's Community-Based Energy Development (www.c-bed.org)

Special thanks to Manitoba Housing and Community Development and Manitoba Agriculture Food and Rural Initiatives, both of which have provided us with guidance and support.

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APPENDIX A: BUDGET REQUIRED TO LAUNCH THE CPC

(assumes one year timeline)

Project Costs (prior to the launch of the pilot project)	<u>Amount</u>	<u>Total</u>
Facility and Equipment Rental		2,700
12 community meetings x \$150 room rental fee	1,800	
Equipment rental (projector, flip charts): 6 meetings x \$150 equipment rental fee	900	
Communications - Printing, Advertising, Web Site		20,400
Web site development \$40/hr x 400 hrs	16,000	
Printing of materials for 12 meetings x \$50/meeting	600	
Phone, fax and internet communications costs: \$50/month x 12 months	600	
Office supplies and consumables: \$100/month x 12 months	1,200	
Advertising for Managing Consultant: \$2,000 one time newspaper and Internet ad	2,000	
Project Coordination and Management		112,400
Reimbursement for Dan: 12 trips to Winnipeg and other communities x \$400/trip	4,800	
Reimbursement for Laurence: 6 Vancouver return trips x \$1000 each	6,000	
Reimbursement for CPC board members: 6 trips to key development meetings x \$400/trip x 7 people	16,800	
Reimbursement for Managing Consultant costs (travel, lodging, meals, materials): \$400/mo x 12 mo	4,800	
Recruitment costs to hire Managing Consultant: \$5,000 one time	5,000	
Compensation for Managing Consultant: 1000 hrs x \$75/hr (fills "Executive Director" role)	75,000	
- Engage communities throughout Manitoba in order to provide information about the model		
- Engage academic and business professionals to review the model		
- Engage Manitoba Hydro and the Government of Manitoba to ensure that issues are resolved		
- Engage other jurisdictions to investigate viability of creating a single CPC across multiple jurisdictions		
- Secure Manitoba Securities Commission support for the sale of equity shares through the CPC		
- Secure legal assistance		
- Secure accounting assistance		
- Develop interactive web site to manage investors		
- Refine the pro forma to meet the model requirements		
- Develop community returns disbursement policy		
Professional and Consultant		226,600
Facilitator for LCPO meetings to establish CPC board of directors: \$100/hr x 16 hrs	1,600	
Academic review consultant: \$100/hr x 30 hrs	3,000	
Business review consultant: \$100/hr x 60 hrs	6,000	
Community power sector legal and financial consulting: 2 experts x \$200/hr x 100 hrs	40,000	
Legal assistance: strategy: \$300/hr x 20 hrs	6,000	
Legal assistance: Cooperatives Branch, bylaws, pro forma and equity drive: \$300/hr x 100 hrs	30,000	
Legal assistance: public-private partnership, contracts, lender discussions: \$300/hr x 160 hrs	48,000	
Accounting assistance: pro forma review: \$200/hr x 40 hrs	8,000	
Accounting assistance: interface with Toronto Renewable Energy Cooperative: \$200/hr x 120 hrs	24,000	
Project developer (wind expert): \$150/hr x 400 hrs	60,000	
Total		<u>362,100</u>

Note: the budget numbers reflect worst case scenario