



Community Power - The Way Forward

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This paper is one of eight background reports on the Canadian Renewable Energy Alliance's model framework and recommendations for a comprehensive Canadian renewable energy strategy. This paper includes recommendations for provincial energy efficiency and conservation policies and for actions backed up by national enabling measures and international participation.

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The Canadian Renewable Energy Alliance (CanREA) is an alliance of Canadian civil society organizations from the non-profit or voluntary sector that share an interest in maximizing energy efficiency and conservation and promoting a global transition to low-impact renewable energy. Members of CanREA believe that this transition is needed to address global climate change, pollution, global energy supply, human security, poverty eradication and economic sustainability. CanREA recognizes that our window of opportunity is limited and that this global transition must begin now through individual country action, international co-operation and a range of innovative market instruments, regulatory measures, public education efforts and voluntary actions.

The organizations actively involved in the formation of CanREA include:

- Canadian Association for Renewable Energies
- BC Sustainable Energy Association
- The David Suzuki Foundation
- Falls Brook Centre
- The Halifax Initiative
- One Sky—The Canadian Institute for Sustainable Living
- The Ontario Sustainable Energy Association
- The Pembina Institute
- Pollution Probe
- The Saskatchewan Environmental Society
- The Sierra Youth Coalition
- STORM Coalition

For more information on CanREA and its members, visit our website at www.canrea.ca

Community Power - The Way Forward

1. Introduction

Canada is facing an energy crisis. The Canadian Electricity Association is calling for tens of billions of dollars to shore up an aging power grid¹, stretched to its practical limits². Unsustainable forms of electricity generation are becoming more costly, electricity prices more volatile, and less reliable. Additionally, to combat climate change, Canada is committed to a 6% reduction of greenhouse gas emissions below 1990 levels by 2012. Meeting these targets will require a shift away from polluting sources of energy, including coal and natural gas. But with these challenges comes an incredible opportunity for a Canadian energy infrastructure at a crossroads: the ability to make a conscious choice to embark on a sustainable energy path, one that is economical, environmentally sound and socially productive, based in communities across Canada.

A report from Natural Resources Canada concludes: “[c]ommunities that seize the opportunity to use local, sustainable resources will be at a competitive advantage, compared to communities that deplete finite resources. Sustainable communities will provide a vibrant economic climate for current businesses, will be better able to attract new businesses, and will be better able to provide an alternative to strip development and suburban sprawl”³. Canadians have the ability to make a conscious choice to embark on a sustainable energy path, one that is economical, environmentally sound and socially productive, based in communities across Canada.

2. Defining Community Power

Community power (CP) is a key element of a sustainable energy future. Defined as locally owned, locally sited, and democratically controlled distributed renewable generation that minimizes environmental impacts⁴, CP has the potential to revolutionize Canada’s energy generation and distribution and revitalize rural economies. It can advance Natural Resources Canada’s goal of ensuring “sustainable development and safe and efficient use of Canada’s energy resources”⁵, while maintaining the balance between the three pillars of their stated objectives for Canada’s energy policy: ensuring security, prosperity and the protection of the environment⁶.

Several renewable technologies lend themselves to CP. While this paper draws frequently on statistics related to wind power, a great deal of CP projects take the form of combined heat and power plants (CHP), also referred to as district energy plants. These plants operate utilizing biomass or biogas, which can be supplied from waste streams such as crop residues and livestock waste. Solar can also be a major CP player, as illustrated by the success of the community solar initiatives that have helped to propel Germany to the forefront of renewable energy innovation. Germany generated 1 billion kilowatt-hours from solar photovoltaics in 2005⁷. Biogas generated through anaerobic digesters presents another attractive small-scale energy option for Canadians, acting as another potential revenue stream for farmers and agricultural communities. Non-generating technologies that focus on demand-side management, such as solar thermal technology for water and space heating, have also been applied successfully in a community power context even without being offered premiums for demand reduction. Though many of the references in this paper are technology-specific, a number of the social, environmental and economic benefits described are common to all potential renewable CP technologies.

Technologies are not the only variable in CP projects. In Canada and around the world, CP can take many different forms. Frequently, projects operate as co-operatives or similarly structured enterprises. They may be owned by community members alone or in partnership with others such as a local utility or larger developers. Other participants in Community Power projects include individual landowners, schools, First Nations, and municipalities. Driven by principles such as democratic member control, member economic participation, education, and information, and concern for the community, co-operative values, even in the absence of a

strictly co-operative structure, are important elements of CP. More than just a catalyst for community economic development, CP can also provide a multitude of social and environmental benefits. As a result of the unique value that CP can bring to communities, it is important to consider certain elements typically external to the economic metrics traditionally used in the valuation of energy projects. On their own, economic considerations are rarely suitable for use in measuring the sustainability of communities, a concept taken into consideration in many progress or development indices. Environment Canada's Sustainable Community Indicators Program⁸, for example, acknowledges indicators of sustainability and well-being go far beyond economic-only considerations.

Though economic indicators are important in judging community sustainability, direct and indirect costs of electricity generation are often difficult or nearly impossible to quantify at the community scale, as are other financial and non-financial considerations not typically considered in cost-benefit analyses or in procurement decisions. Quality of life does not necessarily correlate directly with economic indicators, particularly at the micro or community level; instead, metrics across three broad (and often overlapping) areas must be considered in decisions surrounding energy policy: economic, environmental and social considerations all are of crucial importance in building and maintaining strong communities.

3. Economic benefits

A significant body of research points to substantial economic, social and environmental benefits in the community ownership of renewable energy projects when measured against the commercial development of renewable generation, or the development of centralized forms of conventional electricity generation. CP has several advantages over the development of conventional centralized generation and the accompanying ownership schemes. By tapping into the power of local communities, CP can diffuse costs and risks associated with new generation capacity. CP also draws on local sources of capital through private local investment, which can help to lower the cost of capital⁹, easing the often substantial up-front costs encountered in renewable energy investments. CP also further reduced the financial risk associated with building new generation capacity; by building distributed renewable capacity that can be matched with loads near the source of generation, the risk of under- or over-building in a volatile electricity market is reduced.

The most significant economic argument to be put forth for CP is strongly rooted in the communities that will pursue it: the resultant stimulation of local economies could prove to be significant. Several studies have noted that locally-owned renewable generation, and wind generation in particular, creates five to fifteen times more economic activity in the local community than typical commercial developments, particularly in rural economies (Lovins, Southwest Regional Development Commission, Walsh/IPP). One analysis, carried out by Minnesota's Southwest Regional Development Commission, found that community-owned distributed generation can add as many as 150 jobs and from \$700 000 to \$4.3 million when compared to the traditional ownership model utilized in centralized generation, and that local economies can see far greater benefits in the form of the revenues generated by CP projects that are retained and reinvested by members of the community¹⁰. Another study, carried out by an Iowa-based consultant and cited in a brief by the Iowa Policy Project, found that small-scale, locally owned projects generated approximately ten times more economic activity than wind generation owned by out-of-state companies, also taking into account the benefits from retaining tax and other incentives available from the federal government in the U.S. (figure 1)¹¹.

Figure 1: Where the Dollars Go: A Comparison of Different Ownership Structures

	Large wind owned by out-of-state companies	Small wind owned by local community members
\$ Stay in community	12 200	65 900
\$ Stay in state	5 100	100 300
\$ Leave the state	148 000	21 300
\$ From federal tax incentives	63 400	66 200
\$ To wind farm from electricity sales	100 400	100 400
\$ From proposed state incentives	0	20 100

Analysis reflects figures per 1MW annual generating capacity.

Yet another analysis appearing in the Iowa Policy Project's brief on the economic benefits of local wind ownership is one carried out by the U.S. Department of Energy and National Renewable Energy Laboratory (NREL). The model used in the analysis, called Jobs and Economic Development Impact (JEDI), is meant to capture many of the economic benefits, including the local impacts, of wind development in particular¹². The results of this

analysis illustrate that community ownership of distributed renewable resources can result in greatly increased economic benefits in distributed economies (figure 2)¹³.

Figure 2: JEDI Analyses of Different Ownership Structures in Iowa

County	Project Size	Number of Turbines	Local	Local Annual O&M Spending (millions)	Total Jobs (direct, indirect, induced) impacts (during construction)	Total Jobs (direct, indirect, induced) impacts (during construction)
Buena Vista	1 – 150 MW plant	200 - 750 kW	\$1.9	\$4.9	47	86
Buena Vista	1 – 40 MW plant	54 - 700 kW	\$0.5	\$1.3	13	23
Buena Vista	20 – 2 MW plant ²		148 000	\$7.2	13	48
Cherokee	1 – 150 MW plant	100 - 1500 kW	63 400	\$4.9	33	93
Cherokee	1 – 40 MW plant	27 - 1500 kW		\$1.3	9	25
Cherokee	20 – 2 MW plant ²			\$7.2	9	52
Dickinson	1 – 150 MW plant	200 - 750 kW		\$4.9	40	81
Dickinson	1 – 40 MW plant	54 - 750 kW	100 400	\$1.3	11	22
Dickinson	20 – 2 MW plant			\$7.2	11	48

Community ownership also serves to bolster public support for renewable energy technologies by engaging more stakeholders in new projects, while improving transparency and promoting open and democratic models of governance in electricity generation. This can help to reduce the frequency and severity of siting objections¹⁴, leading to fewer regulatory hurdles, lower lead times, and as a result, significantly lower costs. More benefits from increased public acceptance of projects through local ownership are described in the “Social benefits” section below. Further, community power can accelerate the realization of the benefits that accrue from distributed generation¹⁵, including the scaling of project to meet demand in specific regions, avoiding the construction of costly new centralized generation, and reducing the need for transmission infrastructure while improving energy efficiency. Distributed generation and community power are symbiotic and synergistic; for one to grow, the other must also develop. Distributed and community-based approaches to energy are complimentary: both involve a decentralization of electricity generation, community economic development, and the use of environmentally benign energy sources. For more on the benefits of distributed generation, see the paper in this series on distributed generation, available through the Canadian Renewable Energy Alliance.

Although community power projects are often smaller than their commercially-developed counterparts, they are not necessarily any less desirable. A substantial body of research suggests that after a certain threshold has been achieved, larger electricity generation projects can actually result in *diseconomies of scale*¹⁶, while community power provides additional indirect benefits beyond cost alone, only some of which are described above. In *Small is Profitable*¹⁷, winner of a “Book of the Year” award from The Economist, the authors cite more than 200 benefits of distributed resources, dozens of which relate directly to the proportion of community ownership of distributed resources.

5. Environmental benefits

There are numerous environmental benefits associated with CP, most of which are achieved through community ownership of distributed renewable generation. The paper in this series on distributed generation also describes in more detail many of the environmental benefits associated with small-scale community power. Smaller, community-scale generation tends to have less severe impacts on wildlife (including avian populations), results in fewer negative hydrological effects, and causes less erosion, less noise, and less shadow flicker than its centralized counterpart when properly sited and planned. In addition to the environmental benefits that accompany less-centralized generation, plans and siting proposals put forward by local residents may be more sensitive to regional conditions and specific environmental circumstances that are better understood or recognized through experience and local knowledge than through assessments performed by outsiders alone¹⁸.

Community ownership of electricity generation also allows communities to choose the methods of generation they feel are most appropriate for sustainable development, a choice that can lead to an increase in modular, distributed renewable generation capacity. Most sources of renewable energy have minimal environmental impacts; by encouraging to these non-pollutant emitting or minimally-emitting energy sources, community power

can help to mitigate climate change impacts, reduce smog and limit other air pollution, including the precursors of acid rain, by reducing the need for generation technologies that emit carbon dioxide, nitrous oxide, and sulphur dioxide emissions. Consciously choosing green energy sources can also cultivate a better understanding of energy issues within communities, potentially leading to reduced energy consumption and increased efficiency, offsetting the need for new generation and limiting the environmental impact of polluting generation technologies.

4. Social benefits

CP also provides a multitude of social benefits, from increased community capacity to fostering a broader acceptance of renewable and distributed energy technologies and models¹⁹. Acceptance of renewable energy projects is important not only from an economic perspective, but also from a social perspective. In the case of wind power, community acceptance has proven to be a persistent barrier to new development. Community members may take issue with utility-scale wind turbines, citing noise issues, aesthetic impacts or potential harm to wildlife that can be legitimate concerns. In North America, where wind projects have typically been owned by large utilities or developers, communities frequently view large projects as being imposed upon the community by outsiders looking to exploit community land and resources without passing on the benefits they receive to the local people and infrastructure. CP avoids this problem by promoting co-operative community ownership of renewable energy projects; individuals are more likely to support a community-based enterprise that is driven by local investment than a commercial-scale development from which they will see considerably less benefit²⁰.

By providing an opportunity for local participation and ownership, CP projects can offer community members a chance to participate democratically in making decisions about energy sources and ownership models. In the case of locally owned co-operatives, transparency also tends to increase, facilitating greater levels of direct accountability along with a more dispersed risk, which can bring communities together through a sense of shared responsibility. Additionally, a greater sense of direct democratic involvement in a project can encourage broader democratic participation in other community matters.

CP projects can help to build community capacity for future endeavors and other community-based projects, and completed projects are often a source of pride for communities. They also allow individuals and communities to show their support of and belief in renewable energy technologies, while building technical and non-technical skills, often through work in rural communities where such skill-building is needed most. This contributes to an increased number of skilled jobs, and in the case of community-owned wind power, can lead to more diversified revenue streams for farmers and rural landowners, in turn resulting in more financial independence for these landowners. Subsequently, these landowners rely less on government subsidies and outside financial support, a positive impact that is accompanied by its own set of social and psychological benefits. Increased employment from new projects would also provide further benefits to communities; the David Suzuki Foundation estimates that 8000 MW of installed wind capacity in Ontario alone could generate as much as \$14 billion in economic activity, and result in as many as 97,000 person-years of employment²¹.

Many of the aforementioned benefits are not merely distinctly social, economic, and environmental, but some combination of all three categories. Socio-psychologically, economically, and environmentally, one of the most important positive impacts of CP is its effect on perceptions of electricity generation, and particularly its aesthetic impact. Aesthetic impacts of wind projects in particular have proven to be “the strongest single influence on public attitudes”²² in project siting considerations²³. By establishing community ownership of renewable energy projects, objections to siting and aesthetic impacts of new infrastructure are reduced considerably. Renowned wind energy expert Paul Gipe has noted the benefits of community ownership when it comes to new energy infrastructure; “your own pigs don’t stink”, Gipe reported one Dutch farmer as saying.

It is also important to note that the overlap in the types of benefits (economic, environmental and social) results in a synergistic effect that multiplies the positive impact of CP²⁴. For example, community ownership (social) is part of the financial success of the project. Local ownership also builds the local economy, thereby creating additional new jobs beyond the project itself, allowing more people to make their homes there with some sense of security and long-term stability financially: social and economic intertwined. These three categories are sometimes combined to define “sustainability”.

Community power, driven by progressive renewable energy mechanisms (such as Advanced Renewable Tariffs) has been a driver of rapid renewable energy growth in Denmark, Germany and throughout the world. In Denmark 175,000 households own 80% of all the wind turbines in the country²⁵, and in Germany, one of the the world leaders in renewable energy, 35% of wind projects, along with many solar and small-scale hydro projects are

community owned. Canada can replicate this model by building on the successes community power elsewhere while tailoring the concept to fit the nation's entrepreneurial strengths and existing models of community organization, with particular emphasis on co-operatives. Developing community power projects through co-operatives makes sense; they are a familiar organizational model for Canadians, and the goals of community power and cooperatives are parallel. Co-operatives are guided by both economic and social considerations; "they are community-based organizations that care not only about the bottom lines of their businesses, but about the needs of their members and the quality of life in their communities" (<http://www.coopscanada.coop/aboutcoop/> - the Canadian Co-operative Association).

5. Disadvantages to CP

While there are a multitude of upsides to CP, there are also some downsides that bear discussing. Community ownership can result in fewer economies of scale being achieved²⁶ due to the distributed and modular nature of CP. Smaller projects can also create a greater administrative burden²⁷ for governments, regulatory agencies and utilities. Rates of return on CP projects may also be less attractive than commercially developed projects due to the considerations of economic, environmental and social sustainability that many CP projects incorporate, although when externalities are accounted for by incentive programs or through progressive power purchasing schemes, the rates of return can be higher than larger-scale commercial developments.

6. Developing a successful CP sector in Canada

When supported by progressive policies, community power has been a driver of rapid renewable energy growth in Denmark, Germany and throughout the world. In Denmark, 175,000 households own 80% of all the wind turbines in the country. Canada can replicate this model by building on the successes of community power elsewhere, and by removing the barriers to the development of community power through the implementation of proven policy mechanisms that are being increasingly adopted throughout the world to level the playing field between highly subsidized centralized generation and community-owned, distributed renewable generation.

Barriers to the development of community power in Canada still exist, but the majority of these barriers are surmountable through a combination of innovative policy approaches and the implementation of proven policy mechanisms^{28, 29} that are being increasingly adopted throughout the world. Canada's current regulatory climate and institutional bias heavily favour centralized generation through considerable direct and indirect subsidies, many of which are the result of years of sustained investment of billions of dollars. To address this problem will require a suite of policy

7. Recommendations

Financing

Barrier:

Financing capital-intensive renewable energy projects can be exceedingly difficult for community groups, many of which rely on bank loans or other debt financing to raise early development capital. Without the ability to sell electricity to the grid at a reliable rate, individuals and communities interested in generating renewable energy have no means to develop new renewable capacity. Due to a lack of predictable price for the energy they generate, CP groups are unable to develop figures illustrating anticipated returns on which to base a business plan, and subsequently unable to leverage funds from financiers.

Solution:

Provincial governments must implement Advanced Renewable Tariffs (ARTs) with the central support of the federal government, to provide long term fixed contracts for community power projects. This political commitment to the development of CP is critical to the success of new projects. ARTs provide opportunities for diverse participation in energy programs and provide the economic assurance necessary to help finance CP. In Europe, ARTs have helped lead to a high proportion of local ownership in countries like Germany that are leading the renewable energy transformation. ARTs must provide sufficient contract length along with sufficient, stable prices to give confidence to investors, **and must guarantee a streamlined interconnection process for distributed generation to connect to the grid** to enable community participation. Provincial governments should take immediate steps to implement ARTs, supported by a coordinated effort to facilitate these new policies through the support of the federal government. Other methods have been tried in North America, but have proven largely unreliable. Production Tax Credits (PTCs), a popular model in the United States, are not adequate to encourage a healthy and sustainable renewable energy market; tax credits and other

subsidies are vulnerable in their need for frequent renewal with each new budget, and they also serve to distort electricity markets by hiding the real cost of electricity from consumers, and spreading the cost amongst all taxpayers. ARTs avoid this pitfall by spreading premium costs across consumers of electricity³⁰. When properly implemented, ARTs have an excellent record of success; from their introduction in Germany in 1991, ARTs have helped to make Germany the world leader in installed wind capacity, with more than 18 000 MW of installed capacity as of 2005³¹.

Barrier:

Even with a guaranteed contract, securing development funds can be exceedingly difficult in the initial stages of a CP project. Even with a fixed payment rate for renewable energy generated by community-based projects and streamlined interconnection to the grid for small renewable generators, banks and other financiers may be slow to engage unfamiliar markets that may be perceived as highly uncertain due to limited precedent for such projects in Canada. Early adopters and CP innovators may find it extremely difficult to procure financing, and the debt-to-equity ratios may be unreasonably skewed toward high equity requirements by financiers in a novel renewable energy market, severely limiting the contribution of CP.

Solution:

Provincial governments and the federal government must:

- **Come together to provide financing support for community power projects through a central fund.** Community power is a novel proposition in Canada. Although it has met with success in Europe, Canadian financiers unfamiliar with the community power model may be hesitant to provide project financing. Low cost accessible financing, particularly for up-front development costs, is necessary to spur the growth of community power and to see community projects through their early stages. The federal government should implement a fund for community power that provides up front development dollars for communities to deliver projects through **low interest or forgivable loans and grants**, which will help realize the multifaceted benefits of community power. Provinces should either contribute to this fund or be given resources from such a fund to develop their own models. In Ontario, the Co-operative Fund for Community Power is attempting to establish a revolving fund to help CP groups take advantage of Ontario's newly implemented Standard Offer Contract program.
- **Provide tax incentives to support community power growth and encourage energy conservation and efficiency.** Tax incentives have often been a driver of CP³². Denmark and Sweden's approach of allowing tax-free generation for CP has proven to be a successful model. Each member of a co-operative or partnership is not taxed on their share of the income from a wind turbine's production as long as the income derived from that production (or the amount of electricity produced) does not exceed that member's annual expenditure on (or consumption of) electricity. This provides a further incentive for conservation and energy efficiency, synergistically multiplying the environmental and economic benefits of renewable CP by reducing energy consumption and mitigating the need to deploy new generation capacity and transmission and distribution infrastructure.

Capacity

Building community capacity by developing skills and a technical knowledge base is critical to the success of CP. By building capacity locally, more jobs and economic benefits can be created, resulting in stronger, more resilient communities. There are several capacity-related barriers that may limit the growth of the CP sector, but there also exists a suite of capacity-building solutions that governments can deliver to facilitate the growth of the CP sector, particularly in its early stages.

Barrier:

Lack of awareness surrounding CP opportunities presents a potentially significant obstacle to CP. For Canadians to participate in or catalyze CP projects, they must understand the benefits that CP provides along with the potential for community participation in electricity generations. Largely as a result of Canada's historical predisposition to centralized generation, CP may be an unfamiliar concept to communities and individuals, and they may be hesitant to invest time or money in CP ventures. Communities are often simply not aware that they have the ability to become involved in the generation of renewable energy³³

Solution:

Provincial governments and the federal government must educate and empower Canadians with respect to energy choices and community power opportunities. As technologies develop and the options for renewable distributed generation grow, the government must help Canadians understand the opportunities and benefits of embedded and distributed generation. Without support at the federal and provincial level for educational programs that promote an understanding of the potential for renewable distributed generation, Canadians may be slow to adopt novel technologies, delaying the benefits that they afford. Government can provide resources to existing civil society actors and reach out by expanding existing educational programs to ensure that these messages reach as many communities as possible. By helping Canadians to understand their energy consumption, where electricity comes from, and how they can generate electricity in their community while contributing to an economically and environmentally sustainable future, educational programs can inspire individuals and communities to take action while reducing the likelihood of objection to CP projects.

Barrier:

Technical and organizational capacity may be lacking in communities that wish to develop CP projects. Although CP helps to build capacity from within communities, a dearth of technical and capacity-building assistance could lead to projects stagnating and plans proceeding without due consideration of the process involved in developing a renewable energy project.

Solution:

Deliver a coordinated community power capacity building program to develop skills in communities, to engage Canadians in energy issues, and to communicate the benefits of community power to Canadian communities. Additionally, the federal government is positioned to facilitate community power development through existing technical support programs, by facilitating both non-governmental organizations with capacity building programs and expanding access to federal programs. Providing technical and organizational support is critical to the success of CP; participants in successful CP projects can serve as a technical resource for other CP endeavours. This assistance will help to mobilize CP more rapidly while improving project success and loan repayment rates.

Barrier:

Without comprehensive post-secondary programs for training Canadians in the operation and maintenance of renewable energy technologies and their deployment, a shortage of skilled workers could quickly become a bottleneck in a rapidly expanding renewable energy industry driven by CP.

Solution:

Provide adequate training opportunities for skilled labourers and technicians to meet the demand of a growing renewable energy market. Federal and provincial governments should provide additional support to post-secondary programs, both applied and theoretical, as well as managerial, that focus on renewable energy. Retraining and transitional programs should be provided through the Power Workers' Union and other trade unions with support from the federal government and provinces to assist tradespeople and professionals manage the shift toward a new DG-focused infrastructure.

Barrier:

Regulatory difficulties to the co-operative model of community organization in certain areas of the country could prove to be problematic for new groups looking to incorporate as co-operatives. A lack of capacity or familiarity with the process at both the administrative level and at the level of the co-operative members could result in undue delays in the incorporation of new project-oriented CP groups.

Solution:

Support the streamlined development of new co-operatives and ensure an adequate upper limit for co-operative share offerings that can be made independently of registration with provincial regulating bodies. Additional co-op capacity building resources can be extended through existing federal or provincial resources such as the Co-operatives Secretariat, community economic development groups, and local civil society actors to help new co-operatives through the start-up and incorporation phases. Local civil society actors also have the ability to provide technical and non-technical support for co-operatives throughout the CP process, from conception to commissioning, and by helping to develop the organizational capacity of CP groups so that they are better able to anticipate common challenges.

Challenges for Municipal and non-municipal local actors:

Because CP is still a relatively novel concept in Canada, many municipalities may have difficulty taking advantage of new opportunities or may be hesitant to support or help catalyze CP projects. Without the support of both the community and municipalities, CP projects may either fail or never develop due to siting or permitting issues or lack of a clear community plan that incorporates sustainability.

Solution:

To help bring new CP projects online as quickly and straightforwardly as possible, municipalities can take the following steps:

- **Partner with community power projects** where the opportunity arises, engaging communities with their local representatives and providing opportunities for more diverse sources of funding, while providing a source of revenue for community members and the municipality.
- **Develop community energy plans and land-use policies that support distributed generation:** Municipalities must develop policies and strategies that encourage the siting of distributed generation technologies³⁴, to provide opportunities for improved energy security and to benefit from the revenue streams provided by distributed technologies. The municipal capital planning process also offers communities the opportunity to save money by installing district energy pipes at the same time they have trenches dug for other buried utilities, or in coordination with the improvement of streets and sidewalks. Community energy plans can set targets and define limits, but should involve public consultation where possible, lest the plan meet with opposition from any quarter³⁵.
- **Streamline the planning and permitting processes for community power projects**, helping to simplify the planning process, and reducing project lead time and project cost. In the municipal growth strategies describe in the first recommendation of this section, plans should include provisions for the siting of community energy projects where appropriate.

Additional resources:

Paul Gipe's wind-works.org

<http://www.wind-works.org>

Wind expert Paul Gipe's online archive of articles and commentary includes a number of CP case studies, reflections on the scale of renewable energy, and information on Advanced Renewable Tariffs (ARTs).

Small is Profitable

<http://www.smallisprofitable.org/>

"Small is Profitable describes 207 ways in which the size of "electrical resources"-devices that make, save, or store electricity - affects their economic value. It finds that properly considering the economic benefits of 'distributed' (decentralized) electrical resources typically raises their value by a large factor, often approximately tenfold, by improving system planning, utility construction and operation, and service quality, and by avoiding societal costs. Small Is Profitable introduces engineering and financial practitioners, business managers and

strategists, public policymakers, designers, and interested citizens to the new value opportunities presented by considering these economic benefits. It also provides a basic introduction to key concepts from such disciplines as electrical engineering, power system planning, and financial economics.”

Ontario Sustainable Energy Association (OSEA)

www.communitygreenpower.ca

OSEA’s website contains a number of resources outlining the potential of CP, the impact of ARTs on CP and renewable energy, and capacity-building resources for groups pursuing their own CP projects, as well as details about OSEA’s member groups with projects currently underway.

Endnotes

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