COMMUNITY-OWNED *Renewables*

FACT SHEET

MAKING RENEWABLE ENERGY A PRIORITY

Feeding communities with renewable energy

WHY CHOOSE COMMUNITY-OWNED RENEWABLES?

Community-owned renewable energy facilities create local jobs and revenue with less environmental impacts than conventional energy options. The majority of Alberta's electricity comes from large coal plants that harm both the air and water, and produce one-quarter of the province's greenhouse gas emissions. Local communities seldom reap the full financial benefits conventional, or even renewable, energy facilities generate when those facilities are industry-owned. A community that owns a renewable energy facility keeps most of the profit, controls the facility's operation and contributes to a healthier environment.

According to the Ontario Sustainable Energy Association (OSEA), community energy proponents may include local residents, farmer collaboratives, co-operatives, First Nations, municipalities and other institutions working to develop local sustainable energy projects.

Why develop community-owned renewable energy projects?

- *Creates a stable revenue source for the community*
- *Builds community leadership, governance, entrepreneurism and expertise*
- *Spurs rural economic development and economic diversification*
- *Reduces environmental impacts*

WHAT MAKES A COMMUNITY-OWNED RENEWABLE ENERGY PROJECT DIFFERENT?

Community-owned renewable energy projects are generally locally owned and operated, and are designed to provide local economic and social benefits. Community members typically control the definition, management and execution of the project so that the goals of the project align with the goals of the local community. These projects commonly involve electricity production, but can also involve the production of heating and transportation fuels. Project size can vary from producing only a few kilowatts of energy to several megawatts or more.

Renewable. It's Doable!

Community-owned projects put the power to generate electricity directly in the hands of citizens.▶

Canadian Success Stories

Canada already has a variety of community-owned renewable energy applications operating under diverse ownership models. These projects range from wind farms, run-of-river hydroelectric projects, solar installations, biomass facilities and biofuel refineries.

Some examples of Canadian projects include:

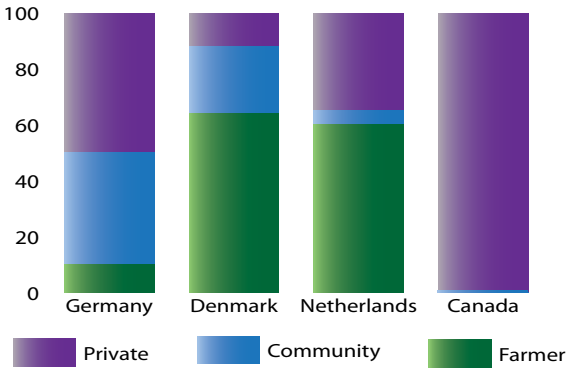
- Weather Dancer 1 Wind Turbine – Pincher Creek, AB
- Windshare Exhibition Place Wind Turbine – Toronto, ON
- Bear Mountain Wind Farm – Peace River, B.C.
- Revelstoke Biomass District Heating – Revelstoke, B.C.
- China Creek Run-of-River Hydro – Port Alberni, B.C.
- Umbata Falls Run-of-River Hydro – White River, ON
- IGPG Renewable Fuels Plant – Aylmer, ON

Constructed in 2002, the WindShare Exhibition Place wind turbine in Toronto, Ontario is the first urban-sited wind turbine in North America and the first community-owned wind power project in Ontario. The turbine generates an average of 1,000 MWh of power per year, equivalent to the electricity needs of more than 200 homes.

INTERNATIONAL COMMUNITY LEADS THE WAY

Germany, Denmark and the Netherlands are leaders in community-owned renewable energy, having developed significant capacity over the last 20 years. With support from government policies to enable citizen participation, these countries have mobilized significant citizen investments in the formation of cooperatives and have developed partnerships with private companies to build and operate thousands of projects.

The Danish Middelgrunden wind farm is a famous example of a community energy project. Built in 2000 and consisting of 20 turbines at 2 MW each, it was, at time of construction, the world's largest offshore wind farm. The Middelgrunden Wind Turbine Cooperative, with roughly 10,000 members, owns 10 turbines, while the remaining 10 are owned by Copenhagen Energy, the local municipal electric company. The wind farm currently powers 3% of Copenhagen's electricity needs.



▲ *Canada's private sector is a leader when it comes to developing renewable energy, but compared to countries like Germany, Denmark or the Netherlands, community-owned facilities lag considerably.*

Cooperatives are based on the values of self-help, self-responsibility, democracy, equality, equity and solidarity. In the tradition of their founders, cooperative members believe in the ethical values of honesty, openness, social responsibility and caring for others.

Benefits of Community-Owned Renewable Energy Projects

Locally-owned renewable energy projects bring social, environmental and economic benefits to communities.

Environmental

By developing low-impact renewable energy projects, communities can reduce greenhouse gas emissions, decrease air and water pollution, increase energy independence, and set an example for other communities.

Social

Community-owned renewable energy projects give members a stake in developing local resources, which generally increases project support. These kinds of projects allow community citizens to participate directly in the creation, installation, operation and financial aspects of a project. Residents who have a stake in such projects are engaged and empowered citizens, often able to see beyond just financial gains to realize the prospects of community vibrancy and long-term viability. Once operational, renewable energy projects can also provide a range of educational opportunities for children and adults alike.

Economic

Community-owned renewable energy projects provide stable, meaningful jobs and keep local money circulating within the community. These projects foster a diversified economy, entrepreneurism and local innovation, and are welcome sources of additional income in rural areas that may otherwise rely heavily on a single sector. Farmers and ranchers often view renewable energy projects as a way to supplement their income without having to leave their land.

CASE STUDY

Wood Waste Put to Work - Revelstoke, B.C.

Revelstoke's Downie Street Sawmills was nearly forced to close due to air pollution from their wood residue burner during the mid-1990s. The sawmill owners, community members and the local government forged a plan to create a community district heating system using their wood waste (biomass) for power, thus forming the Revelstoke Community Energy Corporation. The 1.5-MW biomass plant would reduce polluting emissions, while providing steam to Downie Mills and hot water to the community's buildings. Government loans, including the Green Municipal Fund, enabled the project to proceed. In a 20-year agreement, Downie committed to purchasing RCEC's steam for its dry kilns, maintain and operate the plant, and supply fuel for the plant at no cost. The plant has been operating since 2005.

Benefits

- Long-term employment for the community.
- Profitability for Downie Mills.
- Stable long-term heating price for Downie and other customers such as the local high school, community centre and several motels.
- Improved local air quality through 90% reduction in particulate emissions.
- Greenhouse gas reduction of 3,700 tonnes annually.
- Reduced reliance on costly fossil fuels such as propane.
- A diverse, resilient energy supply.

Canadian Programs and Resources Supporting Community-Owned Renewable Energy Projects

Green Municipal Funds

The Green Municipal Fund is a $550-million program administered by the Federation of Canadian Municipalities (FCM) that offers financial services and resources to Canadian municipal governments to improve environmental performance and reduce greenhouse gas emissions. The fund provides below-market loans and grants, as well as education and training services to support municipal initiatives that improve air, water and soil quality, and protect the climate.

Bio-digester gas and landfill gas capture integrated into municipal facilities are examples of projects that may qualify for FCM grants. Stand-alone renewable energy projects may also be eligible for funding if they are implemented on brownfield sites. Under the program, any municipal government as well as private sector companies or corporations wholly owned by municipal governments are eligible for funding.

For more information, visit: www.gmf.fcm.ca

Alberta Micro-Generation Regulation

The Alberta Micro-Generation Regulation forms part of the Government of Alberta's Provincial Energy Strategy and allows Albertans to generate renewable electricity for their own use and makes it easier to tie into the electrical grid. Small wind, solar PV panels, small-scale hydro, biomass and micro-cogeneration systems under 1 MW in size qualify under the regulation.

For more information, visit: www.energy.gov.ab.ca/Org/pdfs/AB_ProvincialEnergyStrategy.pdf

Municipal Programs

Some Alberta municipalities have incentive programs for renewable energy projects. Medicine Hat's HAT Smart program, for example, offers some of the best financial incentives to residential and commercial building owners to install solar panels and solar heating systems in Canada.

The Alberta Solar Showcase is a renewable energy demonstration project involving 20 municipalities across Alberta, showcasing grid-tied solar PV systems on visible municipal buildings. For more information, visit: www.lassothesun.ca

Farm Credit of Canada

The Farm Credit of Canada offers financial loans to agriculture producers and agribusiness operators that install renewable systems including wind, solar, biogas and geothermal. For more information, visit: www.fac-fcc.ca/en/products/lending/energyloan_e.asp

Research conducted by the Pembina Institute for the Alberta Ministry of Finance and Enterprise found that untapped resources, such as livestock manure, municipal solid waste, agricultural crop waste, municipal waste water, and food and animal waste, could be collected and used for biogas, which has the electricity-production potential of 170 MW, enough to power more than 100,000 homes. This would provide farmers and municipalities with an additional revenue source as well .

Alberta Ideally Suited for Community-Owned Renewable Energy Projects

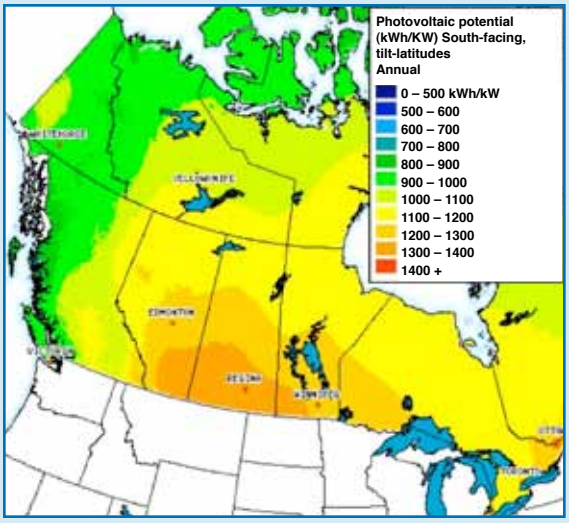
Alberta has tremendous home-grown renewable energy resources. Both wind and solar are especially plentiful in Southern Alberta. Meanwhile, significant opportunities exist for bioenergy projects within the well-established agriculture industry, including both the crop and livestock industry.

Wind

- Southern Alberta is home to some of Canada's highest quality and accessible wind resources, and there are many other sufficiently windy locations all over the province.

Solar

- Alberta is well situated, with some of the best solar resources in all of Canada – especially in the southern part of the province. The province's climate is also ideal for this energy source since solar photovoltaics operate more efficiently in cold weather.



PHOTOVOLTAIC POTENTIAL AND SOLAR RESOURCE MAPS OF CANADA – NRCAN CANADIAN FOREST SERVICE

Bioenergy

Biogas

- Biogas systems convert manure, feed spills, crop residues, slaughter waste and other organic wastes into methane, which can generate heat and power while significantly reducing greenhouse gas emissions.

Biomass

- Biomass facilities combust waste wood from forest products and agriculture crop waste to produce heat and power.

Do you have what it takes for a successful community-owned renewable energy project?

Do you have a potential community-owned renewable energy project in mind? These factors will help you decide if your project could be successful:

1. Adequate local renewable resource – choosing the right size and the right technology in the right location.
2. Dedicated citizens and citizens' groups with the skills and drive to implement community energy initiatives.
3. Community support from citizens, businesses, industry and government.
4. Supportive government policies for community energy, such as feed-in tariffs.
5. Electrical infrastructure that accommodates small-scale, distributed energy producers within the grid.
6. Partnerships between utilities, developers and government for funding and technical expertise.
7. Access to financial capital in the form of investments, grants and loans.
8. A strong business plan and the means to carry it out.

Steps for Starting a Community-Owned Renewable Energy Project

1. Identify the best options for developing renewable energy resources in the region based on economic, social and environmental factors.
2. Identify a core group to lead the project's development.
3. Engage the community and begin to address concerns.
4. Determine the technical and economic feasibility of the project.
5. Set a clear vision, goals and approach for the project.
6. Secure a buyer for the energy.
7. Develop a business plan and arrange financing.
8. Seek engineering and legal services.
9. Obtain registrations and licences.
10. Implement the business plan, engaging the broad community regularly.

Policy Challenges and Solutions for Alberta

Alberta market presents challenges for communities

Alberta currently has a deregulated electricity market, which means the price of electricity fluctuates according to supply and demand. This system allows anyone who meets minimum criteria, including communities, to build and operate electricity generating systems. The absence of a guaranteed price, however, creates financial obstacles for smaller citizens' groups or co-operatives. Power purchase agreements that offer a guaranteed price over the long-term create stability and reduce financial risk.

Other jurisdictions more supportive of community-owned renewable energy projects

Over the past few years, Ontario, Quebec, B.C., New Brunswick and Nova Scotia have passed legislation that specifically targets and supports community-owned renewable projects. These provinces have chosen to introduce some of the following policies:

Feed-in Tariff

Feed-in Tariffs are widely considered to be the most effective approach for spurring investment in renewable energy because they ensure a guaranteed price (or tariff) for the renewable energy that is fed into the grid. Ontario's Feed-in Tariff program, introduced in 2009 as part of the Green Energy Act, has already awarded 2,500 MW of contracts for wind, solar, biogas and hydro projects. Almost 20% of these contacts have been won by homeowners, farmers, and community and aboriginal groups.

Renewable Portfolio Standard

A Renewable Portfolio Standard is a legal requirement for a certain percentage of the electricity supply to be derived from renewable sources. An RPS can establish specific set-asides for community-owned projects such as in Quebec.

Production Incentive

Production incentives provide payment for electricity that meets specific criteria, thereby encouraging more distributed generation from renewable, low-impact sources.

Offset/Voluntary Market

The voluntary market consists of renewable energy projects that were not developed for the purpose of fulfilling mandatory targets (the compliance market), and includes projects completed for the purpose of generating carbon offsets. The voluntary market played a role in almost one-half of installed wind capacity in the U.S. as of 2008.

Resources

Agriculture and Agri-Food Canada: www.agr.gc.ca

Alberta Community and Co-op Association (ACCA): www.acca.coop

Canadian Co-operative Association: www.coopscanada.coop

Canadian Renewable Fuels Association: www.greenfuels.org

NativeWind - www.nativewind.org

Ontario Sustainable Energy Association: www.ontario-sea.org

Southern Alberta Alternative Energy Partnership: www.saaep.ca

SouthGrow: www.southgrow.com

Wind Works: www.wind-works.org

Municipal Economic Development Offices

Albert Acts on Climate Change: www.albertaacts.ca

The Pembina Institute: www.pembina.org

Alberta Acts on Climate Change
Turning local vision into action.

the PEMBINA institute
25 years of Sustainable Energy Solutions