



# OSEA

ONTARIO SUSTAINABLE ENERGY ASSOCIATION

## Ontario First Nations and Renewable Energy Context, Opportunities, and Case Studies



First Nation Owned Wind Dancer I  
Photo: Tim Weis

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# 1 WHAT ARE WE DOING HERE

Native people have an original role to play in protecting our Earth. The struggle between environment and development is often much more immediate to First Nation communities than to anyone else. Small populations, remoteness, isolation and lack of resources present many challenges. At the same time, it is increasingly vital that our power needs are met without destroying the home that the Creator gave us. First Nations, now more than ever, have the opportunity to do something about it. This module has been tailored specifically to help First Nations in this exciting task. It may not address all circumstances, but we believe that there is enough information to start a First Nation down the path towards its own energy project.

# 2 OPPORTUNITIES AND OBSTACLES

At the present time there are great opportunities for First Nations to take the initiative and become power generators. There are challenges to such ventures, but they are not impossible to overcome. Recently, Ontario's electricity needs have come under scrutiny. It is apparent that we need reliable, high-quality power, but also we need to produce it in a manner that cares for the planet. As Aboriginal people we understand that the Earth must be treated with respect.

First Nations tend to be small and remote, and dependent on outside resources, such as Hydro One, whose main focus is in larger markets. Electricity costs have always been a major burden. By becoming a power generator the First Nation can directly address this issue for itself. Because we take our own interests to heart, we are best able to make a reasonable business case. Additional opportunities for economic development and income generation are available if the community is connected to the grid.

<b>OPPORTUNITIES</b>
<ul style="list-style-type: none"><li>▪ Reduce dependence on Hydro One</li><li>▪ Reduce vulnerability to power disruptions</li><li>▪ Lower energy costs</li><li>▪ Community pride</li><li>▪ Independence</li><li>▪ Example of First Nation initiative</li><li>▪ Environmental benefits</li><li>▪ Possible income generator</li><li>▪ Possible job creation</li></ul>

<b>OBSTACLES</b>	<b>PROSPECTS</b>
<ul style="list-style-type: none"> <li>▪ Lack of development funds at the First Nation</li> </ul>	<ul style="list-style-type: none"> <li>▪ Many opportunities available from federal sources – see Additional Resources (section 6)</li> </ul>
<ul style="list-style-type: none"> <li>▪ Hard to secure other funding</li> </ul>	<ul style="list-style-type: none"> <li>▪ See above</li> <li>▪ Obtain partner to assist in providing funds and/or searching for funds</li> </ul>
<ul style="list-style-type: none"> <li>▪ Hydro One is difficult to work with</li> </ul>	<ul style="list-style-type: none"> <li>▪ As more generators come on line, Hydro One is slowing working to make it easier</li> <li>▪ Organizations like OSEA are there to help you through the maze</li> </ul>
<ul style="list-style-type: none"> <li>▪ Insufficient technical support</li> </ul>	<ul style="list-style-type: none"> <li>▪ Use support organizations like Tribal Councils, OFNTSC</li> <li>▪ Federal Departments and provincial agencies (e.g. REED or MNR Waterpower Division) will often share information and help point you in the right direction</li> <li>▪ Use Organizations like OSEA</li> </ul>
<ul style="list-style-type: none"> <li>▪ Hard to get the right people the right training to pursue and manage this type of project</li> </ul>	<ul style="list-style-type: none"> <li>▪ Make sure you put capacity building training budgets into business plans and funding proposals</li> </ul>
<ul style="list-style-type: none"> <li>▪ Not enough specific information on how to do it</li> </ul>	<ul style="list-style-type: none"> <li>▪ Attend workshops e.g., OSEA</li> <li>▪ Lots of on-line information available</li> </ul>
<ul style="list-style-type: none"> <li>▪ Not enough information tailored to the native experience</li> </ul>	<ul style="list-style-type: none"> <li>▪ Network with other First Nations who have experience</li> <li>▪ Contact your PTO's and regional organizations</li> <li>▪ OSEA recognizes this issue and is attempting to address it</li> </ul>
<ul style="list-style-type: none"> <li>▪ Inability of INAC to be supportive</li> </ul>	<ul style="list-style-type: none"> <li>▪ Sustainable Development Initiative is slowly helping federal departments to become more responsive</li> <li>▪ Partnerships with outside groups, organizations and agencies can help to overcome INAC inertia</li> </ul>
<ul style="list-style-type: none"> <li>▪ Lack of specific agency contacts to help with projects</li> </ul>	<ul style="list-style-type: none"> <li>▪ Work with agencies like OSEA</li> <li>▪ Develop relationships with partners and/or agencies that can assist</li> <li>▪ Network with other First Nations and other native organizations who have had some success</li> </ul>
<ul style="list-style-type: none"> <li>▪ Lack of recognition of unique worldview by outside project proponents</li> </ul>	<ul style="list-style-type: none"> <li>▪ Network with other First Nation to discover which organizations are respectful of native communities</li> </ul>

### 3 PROJECT PATH

The following path is an example of how a First Nation-owned sustainable energy project may progress. This is representative of a best-case scenario, where everything goes smoothly, according to plan, and without any political or administrative “speed bumps”. And we all know how likely that is! Also, in your community, the order of some of these steps may differ, or steps may be combined, but most (if not all) of these steps will occur.

You may want to consider putting together a management team. It may be comprised of Council, staff, community members with special interest or ability, technical advisors, or any combination. This team may be very helpful in seeing your project through to a successful completion.

This outline does not explain how to do any of these steps. You are the experts about how your own communities function. Some of the technical steps are covered in other modules of the Workbook. You will want to consider some of the **Section 4 Jurisdictional Issues**, and follow up your research with **Section 6 Additional Resources**.

#### 3.1 FIRST NATION-OWNED ENTERPRISE

These steps assume that your First Nation will take on the task of developing a sustainable energy project. It may be wind, water, solar or biomass.

##### 3.1.1 We Have to Do Something About This

###### **Raising Community Awareness.**

The high cost of electricity is a problem in almost all First Nations. We know that care must be taken to reduce our impact on the Earth. These concerns can come up from the community in a number of ways.

- a. Someone has an idea and may seek out like-minded individuals/potential collaborators.
- b. Raise the issue with a Councillor and/or a staff member
- c. Go to a Council meeting to raise your issue.

##### 3.1.2 Don't You All Agree with Me?

###### **Get Council Support.**

Council may already be aware of the concerns, and may even be the ones to initiate the idea. Nonetheless, it is important to make sure the community supports the idea of undertaking a sustainable energy project. If you can demonstrate the financial feasibility of the idea, and suggest the technical feasibility, it will greatly improve your chances of getting support for your idea.

- a. Hold a Community Meeting. It may be a special meeting to discuss this item, or an agenda item on a regular meeting.
- b. Indicate technical feasibility. Tell people what type of project you think would work and why.
- c. Demonstrate financial feasibility. Show them a list of funding programs, or an example of how it was done in another community, etc.

### **3.1.3 Great Idea, but How can We Afford It?**

#### **Pursue Funding Options.**

For any project on a First Nation, financing is a major roadblock. Of course, if your First Nation is already “rolling in dough”, you can skip this part. There are at least two stages that need funding – information gathering (technical feasibility study, business plan development, environmental assessment, etc.), and construction and management of the project.

There are a number of funding resources available to First Nation communities, and supports for Aboriginal ventures. The following list lays out some of them. Take a look at **Section 6 Additional Resources** to get some ideas about where you might find support. And don’t limit yourself to Aboriginal-targeted options only. Most of the options open to municipalities and the general public are yours as well.

- a. Typically the realm of the Economic Development Officer.
- b. INAC – Economic Development; Sustainable Development; Infrastructure;
- c. Industry Canada
  - i. FedNOR – NOEDF – Capital Projects
  - ii. Aboriginal Business Canada (ABC) – business plans
- d. NRCan – Energy Sector
- e. Environment Canada – Climate Change
- f. HRDC – employment training
- g. Charitable Foundations e.g., Trillium, Schad
- h. Corporate funding
- i. Partnerships/Joint Ventures

### **3.1.4 Does it Even Make Sense to Try to Do This?**

#### **Technical Feasibility Study.**

Feasibility studies will tell you whether or not you have the resources (be they wind, water, solar or biomass) to undertake your project, and give you a sense of where potential problems may arise.

- a. At least one year’s worth of data typically required to test the availability of the resource

- b. Planning considerations – distance to houses, concerns of neighbours of community, noise, aesthetics, direct impact on land, water and wildlife
- c. Site selection – band land
- d. Ease of grid connection vs. First Nation infrastructure connection

## **Business Planning**

It is important that you consider how the enterprise will be structured. It has the potential to create a few jobs, and there may even be profits. It is important to have a plan for how it will continue to develop and grow. A business plan is often a requirement from your funding agency. You will have time to develop relationships with energy purchasers and ensure that your Ecologo certification (if you need it) is in place as soon as your project is up and running.

- a. How will this enterprise be managed?
  - i. Community Trust
  - ii. Economic Development Corporation
  - iii. First Nation enterprise
  - iv. First Nation-owned Corporation
  - v. Partnership/Joint Venture
- b. Where are we going to sell the power?
  - i. Net metering / net billing
  - ii. Requests for Proposals from Governments (PSAB)
  - iii. Power purchase agreement
  - iv. Green certification – Terrachoice Environmental Services Inc.
- c. What are the costs of installation and ongoing operation and maintenance?
- d. How long do we expect this to last, and when will we need to replace it?
- e. What is the expected rate of return?
- f. How will we develop capacity and skill?

## **Environmental Assessment (EA)**

First Nation people have a sacred trust with the land. Projects that impinge on the land must therefore be considered carefully. Some communities may have their own process for considering the implications of development; however, all communities will be aware of the *Canadian Environmental Assessment Act (CEAA)*.

Your First Nation will be familiar with the EA process if they have ever undertaken any development project – a community centre, a health building, a water treatment facility, etc. Under the Act, an Environmental Assessment is triggered for projects that use federal funds, require federal land to be sold, leased or transferred, or that need a federal regulatory permit, license or approval. Most EA's are Screening Reports.

Your First Nation may want to examine other benefits and impacts beyond the barebones required by regulation.

- a. Typical Federal EA process
- b. Benefits (e.g. reduction in greenhouse gases) and impacts (e.g. noise) that are outside of the typical EA are worth considering.
- c. Social and economic effects beyond the environmental impact are also worthy of study.

### **3.1.5 Build it and They Will Come**

#### **Project Installation.**

Your project may be fairly simple to build and install, or it may require significant time and expertise. Consider whether you want to use First Nation project managers, construction teams, and operational staff. In your proposals, training and capacity building are important considerations.

### **3.1.6 It's Up and Running...So What Now?**

#### **Project Maintenance and Monitoring.**

While most projects will be low-maintenance, it is important to make sure that you have the capacity to keep it going. You may hire and/or train First Nation staff to do this, or you may chose to contract these services out.

*CEAA* requires on-going environmental monitoring of complex EA's. This includes follow-up once the project is installed, and may also involve on-going monitoring of actual impacts.

If you were interested in Green certification, and have taken the steps to pursue it, you will now need to call up Terrachoice to have them come out and put an Ecologo sticker on your project (well...they actually inspect it).

Now that your special Hydro meter is counting both what you make, and what you pull off the grid (if that's how you chose to do it), don't forget to have a community feast to celebrate your achievements!

## **3.2 PRIVATELY OWNED ENTERPRISE**

There may be situations where a community member, a group of members, or some type of outside business partnership involving community members pursue a project on individually allotted (CP) land with private venture capital. As you can see from the chart, **Section 4.5 Approval Authorities**, there are significantly fewer obstacles to pursuing such a project.



Nonetheless, all of these steps are highly recommended. Your own First Nation will have its own process for addressing individual business enterprises, and you must abide by those. Each First Nation may have by-laws or laws that directly regulate what you can or cannot do. Community acceptance, Council support and Environmental Assessments may not be necessary, but they will enhance the prospects for success. Most of the funding opportunities identified in **Section 6 Additional Resources** will not apply to private projects. Your First Nation EDO will be able to provide further direction.

## **4 JURISDICTIONAL ISSUES**

As in any project undertaken on a First Nation, there will be a number of approvals that will be necessary before the project can go ahead. The chart that follows, **Section 4.5 Approval Authorities**, compares the First Nation situation with that of a provincial jurisdiction. You will note that there are fewer “hoops” for the First Nation-owned enterprise, on First Nation land, and still fewer for an individual with a land allotment (or Certificate of Possession).

### **4.1 FEDERAL AND PROVINCIAL REGULATIONS**

First Nation land is “reserved” - “held by Her Majesty for the use and benefit of the respective bands for which they were set apart”. *Indian Act s.18(1)*.

#### **4.1.1 Relationship to the Federal Government**

INAC is responsible for ensuring that all land used on a First Nation is for the benefit of the community and meets minimum regulatory standards. *“Governor in Council may determine whether any purpose for which lands in a reserve are used or are to be used is for the use and benefit of the band” Indian Act s.18(1)*. As the responsible authority, the Federal Government must ensure that an Environmental Assessment is done.

The proponent is responsible for making sure that all applicable regulations have been dealt with. If concerns arise during the EA, such as transportation, migratory birds, or fisheries, the proponent would approach other appropriate agencies such as Transport Canada, Environment Canada or the Department of Fisheries and Oceans. If INAC is supporting the project, they may help to resolve the problem. The resolution may include additional studies, design changes, etc.

#### **4.1.2 Provincial Legislation**

Provincial legislation has no authority on First Nation lands; however, a project will need to take provincial authorities into account if it impinges on Crown land. An example of this might be a small hydro project on a nearby river. A project that is anticipated to create large volumes of traffic

on a nearby municipal road may also subject itself to the regulations of adjacent municipalities.

## **4.2 LAND REGULATIONS**

At the feasibility study stage, the land for the project must be identified. All Reserve land is either Band land (for communal use) or CP land (Certificate of Possession allotted for individual use). The land may have a lease or permit for use by another interest on it. The land may have to be acquired if needed. If the developer is not the First Nation, a land lease or permit may be required.

### **4.2.1 Indian Act Lands Administration**

If a project is undertaken by an individual CP holder, under Indian Act lands management there are very few rules and regulations that restrict the activity on that land. INAC is reluctant to enforce environmental regulations. The First Nation can obtain jurisdiction through the by-law process, but enforcement is difficult.

The Indian Act gives First Nations the right to pass by-laws on various matters including lands activities, and any community may exercise this right. This option is seldom exercised due to enforcement issues – it is essentially a federal law with no enforcement mechanism and there can be a reluctance to enforce rules on fellow community members.

### **4.2.2 First Nation Lands Management Act (FNLMA)**

Ultimate administrative control is through INAC except where First Nations are signatory to the First Nation Land Management Agreement (FNLMA). Authority under FNLMA gives exclusive control of First Nation land to the First Nation except for fishing, migratory birds, species at risk, oil & gas, uranium & radioactive minerals.

Once a land code is ratified by the community, the First Nation can make laws governing any activity on its land. These laws will be specific to each First Nation, and where enacted, these laws must be consulted for applicable regulation of specific activity.

## **4.3 COMMUNITY PROCESS**

All major projects must be acceptable to the community as a whole. Approval of this nature is usually sought at a community meeting to which all members are invited. Typically, no major project will proceed without community support that has been expressed at a community meeting. Decision-making authority in Canadian society is seen to flow from the Federal → Provincial → Municipal → Community at large. This is often reversed in the First Nation context. The community is seen to have ultimate authority. Chief and Council, while still playing a key decision-making role, are expected to take their lead from the community.

### **4.3.1 Council approval**

No project on band land will proceed without approval of Chief and Council, usually with the advice of the Land Manager, if they have one. First Nation Council Resolutions (FNCR/BCR) may be required as an expression of approval and/or to secure funding.

### **4.3.2 Support staff**

Not all First Nations will have staff who can provide advice on lands, environment, engineering, planning, etc. and may not have administrative responsibility for any of it. Consultants, project managers, Tribal Councils, OFNTSC, PTO's and Federal department staff may be a source of professional advice and support.

### **4.3.3 Owner/developer**

Major projects are likely to be First Nation-owned enterprises, not private enterprises. The First Nation itself will become the developer and owner. The First Nation administration is already expected to work on behalf of the entire community and to distribute the benefits equally. This traditional understanding of community decision-making is similar to more recent notions of collaborative decision-making often seen in co-operative business models.

A First Nation looks at its own affairs as being largely internal, and therefore confidential, to a far greater degree than is typical in other jurisdictions. This viewpoint may not be understood by those who find themselves working with First Nations.

## **4.4 OTHER CONSIDERATIONS**

### **4.4.1 Hydro One**

Most First Nations don't deal with Public Utility Commissions (PUCs) but directly with Hydro One. Exorbitant costs are a major complaint.

### **4.4.2 First Nation Elections**

First Nation elections are usually held every two years. First Nation activity requiring decision-making will typically slow down for a couple of months before and after the election. While this is typical of election activity in all jurisdictions, the frequency means that a major project of this type, often requiring long feasibility timeframes, must take First Nation elections into account.

#### 4.5 APPROVAL AUTHORITIES

<b>APPROVAL AUTHORITIES</b>		
<b>PROVINCIAL</b>	<b>FEDERAL</b>	
	<b>Band Land Enterprise</b>	<b>CP Land Enterprise</b>
Federal EA	Federal EA	
Transport Canada	Transport Canada	
Canadian Wildlife Service	Canadian Wildlife Service	
DFO/MNR	DFO	
MNR Permits on Crown Land		
Provincial EA		
Hydro One	Hydro One	Hydro One
Conservation Authority		
Municipal Official Plan	Land Law (FNLMA) or Land Management (INAC)	Land Law (FNLMA)
Municipal Zoning By-law	By-law	By-law
Municipal Council	Chief and Council	
Municipal PUC		
General Community Outreach	Community Meeting	
Community Interest Groups		

## 5 FINDINGS OF ONTARIO FIRST NATIONS SURVEY

In January 2004, a survey was completed of First Nation energy projects. Twenty-four out of 134 First Nations in Ontario were contacted. This was not a comprehensive census, but a sample of First Nations with a known connection to, or a suspected interest in, renewable energy. In the course of our research, we learned of other communities who were curious about renewable energy, but were not contacted. Not all interviewees were able to provide the same level of detail about their energy initiatives. We found that a few communities were researching more than one type of project.

Many First Nations hope for a community-based, community-run enterprise. The surveyors perceived a lack of enthusiasm for projects done on behalf of communities rather than those in which they were active participants, or even just active recipients of its benefits.

The following types of projects have been undertaken, are being considered, or are associated with the community at the time of this survey:

TYPE OF PROJECT			
Wind	Water	Solar	Biomass
18	9	8	2

They range in output from 10 kW to 20 MW. Of the solar projects, 3 were panels, one was a wind/solar hybrid, and the rest were discussions around the installation of solar walls. Diesel heat recovery was also being investigated in some remote communities.

Most had only begun to consider their projects:

PHASE OF PROJECT			
Discussion	Feasibility	Construction	Complete
27	3	0	7

Of the ten projects that have moved beyond the discussion phase, all but 2 have been significant partnerships. All have had strong technical support from companies and/or agencies. Four were on First Nation land. Out of these ten, 5 are water, 4 are wind, and one is a solar project. Most water projects tend to be off-reserve, with the collaboration of Hydro One. Native communities were often located away from sites with potential for hydro development.

In eight cases, both Chief and Council and the community were supportive. One was perceived as merely a Hydro One operation, and support was decidedly absent. Three other communities, in the discussion phase, have already achieved community support.

It is worth noting that smaller, or pilot projects, especially in remote areas, suffer high maintenance and repair costs compared to the return on investment, if the community has not developed that capacity.

INAC interest and/or support for these types of projects is just beginning, and they were mentioned in only four cases. When asked, First Nations said the most beneficial resource was a good working relationship with an outside agency interested in seeing

the project succeed. This was occasionally enough to encourage INAC to become involved.

The number one reason for pursuing such projects was profitability. Community pride and environmental sustainability were cited second, with independence a close third. Almost all communities hoped to see cheaper electricity rates from these projects. The most significant barrier was lack of financial support. Long environmental assessments and permitting processes were also seen as hindrances. Occasionally, local politics were seen as an obstacle.

Most communities were unaware, or only vaguely aware of the energy projects on other First Nations. In spite of some successful First Nation energy projects, there seems to be a lack of good case studies and widely distributed information about First Nation initiatives.

## 6 ADDITIONAL WEB RESOURCES

### Where to Look for More Information on the Web

The following resources have been identified as having potential value to First Nations as they attempt to develop sustainable energy projects. Many are specific to First Nation projects, and some are just good general sources of information. While not all are directly related to funding (which was identified by most First Nations as the most significant barrier to undertaking a project), these sites will be helpful both in securing funding, and making the project a success

### 6.1 FEDERAL

Most resources, information, and services that are targeted specifically to First Nations are from Federal sources.

#### 6.1.1 Indian and Northern Affairs Canada (INAC)

Funding

The **Economic Development Opportunity Fund** provides financial aid in the form of matching equity funding. The objective is to use the funding to obtain conventional debt financing (such as a loan from a bank) to start or expand a business. For more information on the Opportunity Fund or other programs that support economic development, please contact INAC toll-free at 1 800 567-9604.

The Opportunity Fund

[http://www.ainc-inac.gc.ca/ps/ecd/pas\\_e.html](http://www.ainc-inac.gc.ca/ps/ecd/pas_e.html)

Economic Development Program Information

[http://www.ainc-inac.gc.ca/ps/ecd/edp\\_e.html](http://www.ainc-inac.gc.ca/ps/ecd/edp_e.html)

Procurement policy

**Procurement Strategy for Aboriginal Business (PSAB)** helps Aboriginal firms do more contracting with the Government of Canada. Contracts worth more than \$5,000 that primarily serve

Aboriginal people are open only for competition among qualified Aboriginal businesses. The strategy works to increase the number of Aboriginal suppliers bidding for, and winning, federal contracts. It also promotes sub-contracting to Aboriginal firms and encourages joint ventures with other Aboriginal and non-Aboriginal businesses. For more information, contact INAC toll-free at 1 800 567-9604 or the Procurement Strategy for Aboriginal Business toll-free at 1 800 400-7677.

The Procurement Strategy for Aboriginal Business (PSAB)

<http://saea-psab.ainc-inac.gc.ca>

[http://www.ainc-inac.gc.ca/saea-psab/pub/polinf/iab\\_e.html](http://www.ainc-inac.gc.ca/saea-psab/pub/polinf/iab_e.html)

Policy Statement

The **Sustainable Development Initiative** has no direct funding identified; however, “The department is building a direct linkage between its SD strategies, SD vision and mandated strategic direction. The foundation of these efforts is facilitating the achievement of First Nations, Inuit and northerners’ visions for their own community sustainability. The role the department plays with respect to each community, now and in the future, will be tailored according to the local circumstances.”

[http://www.ainc-inac.gc.ca/sd/vis\\_e.html](http://www.ainc-inac.gc.ca/sd/vis_e.html)

Funding

The **Municipal Rural Infrastructure Fund** is targeted to First Nation water and wastewater initiatives; however, “Federal objectives on climate change, water quality, urban life, and innovation, will continue to guide project eligibility so that Canadians obtain maximum benefits from infrastructure funding. The green infrastructure focus will address projects such as water and wastewater treatment infrastructure, municipal environmental energy improvements, public transit infrastructure and solid waste treatment infrastructure.”

[http://www.ainc-inac.gc.ca/ps/hsg/cih/ci/ic/index\\_e.html](http://www.ainc-inac.gc.ca/ps/hsg/cih/ci/ic/index_e.html)

[http://www.infrastructure.gc.ca/mrif/info\\_e.shtml?menuD2#4](http://www.infrastructure.gc.ca/mrif/info_e.shtml?menuD2#4)

Funding

**Aboriginal and Northern Community Action Program** was announced in August 2003, as part of the Climate Change Plan for Canada - “The Government of Canada supports efforts by Aboriginal and northern communities to improve their energy efficiency and use alternative energy sources. The \$30.7 million Aboriginal and Northern Community Action Program (ANCAP) will expand partnerships over the next four years with Aboriginal peoples and Canadians in northern regions to build an effective response to climate change, at the same time enhancing quality of life by reducing energy costs and improving local air quality.”

INAC – Jon-Paul Blais 807-624-1570

[www.climatechange.gc.ca/english/publications/announcement/bg\\_governments.html](http://www.climatechange.gc.ca/english/publications/announcement/bg_governments.html)

CanMET – NRCan

Ron Alward 450-652-7102

<http://www.retscreen.net/ang/menu.php>

## 6.1.2 Industry Canada

Funding	<p><b>FedNOR – Northern Ontario Economic Development Fund (NOEDF) – Capital Projects</b> is intended to strengthen Northern Ontario communities by supporting projects that address local need and priorities and result in long term benefits including job creation, economic diversification, and enhanced business competitiveness. Eligible costs are capital costs, including community infrastructure, necessary to meet the objective of the project. FedNor's contributions will normally not exceed 33% of eligible costs to a maximum contribution of \$500,000.</p> <p><a href="http://strategis.ic.gc.ca/epic/internet/infednor-fednor.nsf/vwGeneratedInterE/fn00928e.html">http://strategis.ic.gc.ca/epic/internet/infednor-fednor.nsf/vwGeneratedInterE/fn00928e.html</a></p>
Funding/Resources	<p><b>Aboriginal Business Canada (ABC)</b> provides financial assistance, information, resource materials and referrals to other possible sources of financing or business support. Assistance to establish or acquire a business is intended for first-time entrepreneurs and existing entrepreneurs/businesses that are proposing to carry out a particular commercial activity for the first time.</p> <p><a href="http://strategis.ic.gc.ca/epic/internet/inabc-eac.nsf/vwGeneratedInterE/h_ab00070e.html">http://strategis.ic.gc.ca/epic/internet/inabc-eac.nsf/vwGeneratedInterE/h_ab00070e.html</a></p>

## 6.1.3 Natural Resources Canada (NRCan)

Resources	<p>The <b>Renewable Energy and Electrical Division (REED)</b> delivers several initiatives to encourage the development and use of emerging renewable energy sources and technologies, among them are Renewable Energy Deployment Initiative (REDI) (until March 2004), Wind Power Production Incentive (WPPI), Market Incentive Program (MIP) For Distributors of Emerging Renewable Electricity Sources and Government Purchases of Green Power.</p> <p><a href="http://www2.nrcan.gc.ca/es/erb/erb/english/View.asp?x=68">http://www2.nrcan.gc.ca/es/erb/erb/english/View.asp?x=68</a></p>
Funding	<p>WPPI – until March 2006 – The Government of Canada's <b>Wind Power Production Incentive (WPPI)</b>, announced in the December 2001 budget, is intended to encourage electric utilities, independent power producers and other stakeholders to gain experience in this emerging and promising energy source.</p> <p><a href="http://www.canren.gc.ca/programs/index.asp?Cald=107&amp;PgId=622">http://www.canren.gc.ca/programs/index.asp?Cald=107&amp;PgId=622</a></p>
Funding	<p>MIP – until March 2006 – This initiative is intended to complement other Action Plan 2000 measures, namely the Procurement of Electricity from Renewable Resources for federal facilities. One of the goals of the <b>Market Incentive Program (MIP)</b> is to encourage electricity distributors to experiment with projects to stimulate</p>



sales of electricity from ERES that have low environmental impact, to their residential and small business customers.

<http://www2.nrcan.gc.ca/es/erb/erb/english/View.asp?x=457>

Policy Statement

### **Electricity from Emerging Renewable Energy Sources (ERES)**

Under *Action Plan 2000 on Climate Change*, it is expected that the federal government will purchase an additional 400,000 MW hours or so of electricity from ERES. The goal of the Government purchases of electricity from ERES is to:

- provide a "first customer" to help interested utilities gain experience with different electricity products;
- achieve emissions reductions in federal operations; and
- leverage first purchases to create viable green power markets.

#### **6.1.4 Human Resources Development Canada (HRDC)**

Funding

The **Aboriginal Relations Office** is committed to working in partnership with Aboriginal peoples and their communities to increase their members' employability and to create job opportunities. Contact the Local Delivery Mechanism for your First Nation, or visit

<http://www.hrdc-drhc.gc.ca/menu/aboriginals.shtml>

#### **6.1.5 General Information**

Resources

### **Government of Canada Climate Change Website**

<http://www.climatechange.gc.ca/english/index.shtml>

Resources

### **Clean Energy Portal**

This portal offers unique and extensive access to Canada's burgeoning environmental energy sector and up-to-date details on international climate change initiatives. Presents broad scope national and international information.

[http://cleanenergy.gc.ca/index\\_e.asp](http://cleanenergy.gc.ca/index_e.asp)

Resources

### **Aboriginal Canada Portal**

Federal site containing links to all Federal Aboriginal initiatives, as well as general and specific information pertinent to all Aboriginal people.

<http://www.aboriginalcanada.gc.ca/abdt/interface/interface2.nsf/engdoc/0.html>

#### **6.1.6 Environment Canada**

Certification

The **Environmental Choice<sup>M</sup> Program (ECP)**, Environment Canada's ecolabelling program, provides a market incentive to

manufacturers and suppliers of environmentally preferable products and services, and thereby helps consumers identify products and services that are less harmful to the environment. TerraChoice Environmental Services Inc., an environmental program and consulting services firm, has been the ECP's official management and delivery agent since 1995.

<http://www.environmentalchoice.com/>

Regulation

### **Canadian Environmental Assessment Agency (CEAA)**

Our role is to provide Canadians with high-quality environmental assessments that contribute to informed decision-making, in support of sustainable development.

Funding

The **Participant Funding Program** is for individuals and organizations wanting to participate in the environmental assessment process of a project under review by a panel or a mediator.

[http://www.ceaa-acee.gc.ca/index\\_e.htm](http://www.ceaa-acee.gc.ca/index_e.htm)

Funding

The **National Green Source Funding Guide** is a resource guide prepared by Environment Canada that will help you locate numerous sources of funding for environmental projects. It includes information on public and private sector programs and organizations that provide financial assistance, labour costs or in-kind donations to community groups.

[http://www.ec.gc.ca/ecoaction/before\\_e.html](http://www.ec.gc.ca/ecoaction/before_e.html)

## **6.1.7 Transport Canada**

Regulation

Although compliance to the **Standards Obstruction Markings** is voluntary, it is recommended that persons planning to erect a building or structure likely to be hazardous to aviation safety because of its height and location still abide by these standards as the Minister may, by Order, direct the owner or persons in control of such building or structure found to be hazardous to aviation safety, to mark it and light it in accordance with these standards.

<http://www.tc.gc.ca/aviation/REGSERV/CARAC/CARS/cars/62119e.htm>

## **6.2 PROVINCIAL**

### **6.2.1 Ontario Power Generation (OPG)**

Resources

#### **Green Power FAQ's**

[http://www.opg.com/envComm/E\\_greenPower\\_FAQs.asp](http://www.opg.com/envComm/E_greenPower_FAQs.asp)

#### **Going Green on your Own**

[http://www.opg.com/envComm/E\\_greenPower\\_renewable.asp](http://www.opg.com/envComm/E_greenPower_renewable.asp)

### **6.2.2 Ontario Native Affairs Secretariat (ONAS)**

Policy Statement	<b>The Aboriginal Policy Framework</b> guides Ontario's approach to Aboriginal affairs and was established to ensure that provincial policies, programs and services directed to Aboriginal people help create opportunities for employment and economic development, which will strengthen the self-reliance of Aboriginal communities. <a href="http://www.nativeaffairs.jus.gov.on.ca/english/apf.htm">http://www.nativeaffairs.jus.gov.on.ca/english/apf.htm</a>
Resources	The <b>Aboriginal Partnerships Development Resource Kit</b> promotes economic partnerships between Aboriginal communities and the corporate sector. It is entitled <i>The Power of Partnerships: New Opportunities for Aboriginal Peoples and Ontario Businesses</i> . <a href="http://www.aboriginalbusiness.on.ca/resource_kit/index.html">http://www.aboriginalbusiness.on.ca/resource_kit/index.html</a>

### 6.2.3 Ministry of Natural Resources (MNR)

Crown Land Policy	The challenge for the Ministry of Natural Resources is to manage Ontario's Crown land in a way that balances social, economic and environmental needs now and into the future. This site describes how the ministry tries to achieve that balance and explains how you can get more information on Ministry of Natural Resources Crown land services. <a href="http://www.mnr.gov.on.ca/MNR/crownland/">http://www.mnr.gov.on.ca/MNR/crownland/</a>
Example	First Nations Energy <a href="http://www.mnr.gov.on.ca/mnr/water/N100EE_p745.html">http://www.mnr.gov.on.ca/mnr/water/N100EE_p745.html</a>

## 7 **FIRST NATIONS RENEWABLE ENERGY SYSTEM SUCCESS STORIES**

### 7.1 **PIIKANI NATION, ALBERTA – WIND ENERGY**

#### 7.1.1 Project Overview

The Piikani Nation is located in southern Alberta, just east of Pincher Creek – a community with multiple wind farms. The Piikani, part of the Blackfoot Nation, have a population of roughly 3,000, and are co-owners of a single utility-scale grid-connected wind turbine.

Commissioned in October 2001, the Weather Dancer I is a 900 kW wind turbine manufactured by NEG-Micon, with a rotor diameter of 60 m and a 72 m tower, it is the tallest wind turbine in Alberta. Weather Dancer I generates approximately 3,000 megawatt hours annually, which is sufficient to meet the needs of 450 homes. 80 percent of the power generated by the turbine is sold at a fixed rate to EPCOR Utilities, who in turn market it as a part of their *certified green power* at a premium rate to their customers<sup>1</sup>, while the remaining 20 percent is sold on the spot market to the power pool.

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<sup>1</sup> The electricity is EcoLogo certified.

The project is a joint venture between EPCOR, a utility company owned by the city of Edmonton, and the Piikani Utilities Corporation, who were created for this project. The turbine is considered a pilot project for both partners, both of whom are waiting to analyze the performance data and market conditions before further development occurs.

The wind turbine ties traditional cultural elements with modern technology and new opportunities. The name *Weather Dancer* refers to a Sundance ceremony performed to renew the relationship with nature, while the turbine is capable of displacing up to 2,500 tonnes of carbon dioxide<sup>2</sup> annually, reducing the impacts of conventional power generation on the natural world.

### **7.1.2 Project Development**

The project took almost 20 years to complete from its initial conception by William Big Bull. Changes in wind energy technology, government policies as well as off and on interest from several small companies over the years, meant that progress and support from the Chief and Council was initially slow.

It was not until 1995 when wind farm development began in Pincher Creek that community member became increasingly interested in developing wind energy on the Piikani land. William Big Bull began discussions with a number of experts and companies, including Advanced Thermo Dynamics, a power company affiliated with the Batchewana First Nation in Ontario, who are licensed to supply NEG-Micon turbines. Several anemometers were installed on the reserve to collect site-specific wind data to understand the economic feasibility of the project. The initial vision for the project was a 100 MW wind farm, but it was decided to start small to develop an understanding of the industry. The Piikani Utilities Corporation was able to form a joint venture with EPCOR, from Edmonton, in order to help finance the project. Together the 900 kW Weather Dancer I was erected in 2001, which is jointly owned 50-50 by the two partners, and is supplying electricity to Alberta's power grid.

### **7.1.3 Lessons and Successes**

The first site selected for the wind turbines was located on land that was owned by one of the Nation's members, which was not a preferred option. As a result where the turbine now stands is further from the grid than the initial site, but is located on community-owned land. The new site has met project expectations of a 37% capacity factor<sup>3</sup>.

Several community members were initially skeptical of partnering with a non-First Nations company. Public consultation and open house presentations were made to clarify the arrangement between the First

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<sup>2</sup> Assuming an emissions factor of 0.83 kg CO<sub>2</sub> eqv / kWh in the Alberta electricity pool that is predominantly coal and natural gas.

<sup>3</sup> This is an exceptionally high capacity factor due to the excellent wind regime in the region.

Nation and EPCOR, after which over 250 members completed opinions surveys in favour of the project. Public consultation is on going to inform the community of the project's progress as well as any future development plans.

EPCOR benefited from tax deductions available to renewable energy projects that the Piikani were not able to take advantage of, while providing the necessary financial backing. EPCOR also provided a long-term stable market by agreeing to purchase 80 percent of the power at a fixed rate over the next 20 years. EPCOR markets the electricity as a part of their Green Power Program that offers 'ECO-PACKs' for \$5, \$10, \$20 and \$40 per month premiums, corresponding to 55, 110, 275 or 550 kWh of green power respectively, or approximately 10%, 20%, 50% and 100% of typical residential monthly electricity consumption.

Both EPCOR and the Piikani consider the project to have been successful. The Piikani Nation intends to increase its ownership in the Wind Dancer I to 50%, and eventually develop a wind farm on their land. The Piikani Nation also intends to eventually sell a portion of their wind power directly to their community members.

Support for the project also came from Natural Resources Canada, Indian and Northern Affairs Canada and the Federal Justice Department. The project benefits from an excellent wind regime, as well as the dedication of William Big Bull.

More information about the Weather Dancer I can be found by contacting the Piikani Utilities Corporation or EPCOR Utilities.

EPCOR  
10065 Jasper Avenue  
Edmonton, AB  
T5J 3B1  
Ph: (780) 412-3414

Piikani Utilities Corporation  
P.O. Box 3184  
Brocket, AB  
T0K 0H0  
Ph: (403) 965-3001



Photo of Wind Dancer I  
taken by Tim Weis

## 7.2 **KLUANE FIRST NATION, YUKON – BIOMASS DISTRICT HEATING**

### 7.2.1 Project Overview

The Kluane First Nation is located in Burwash Landing, Yukon about 300 kilometers northwest of Whitehorse. The community is on mile 1093 of the Alaska Highway and is home to approximately 80 residents.

In order to reduce the dependence and possible price fluctuations of imported heating fuel, in 1998, the Kluane First Nation installed a central heating system to provide hot water and heating to four community buildings using locally harvested wood. The system currently services

the administration building, the carpenter shop, the health services building and the Laundromat.

### **7.2.2 Project Development**

Wood chip boilers and district heating systems are fairly common in Yukon, similar systems have been installed in the Champagne and Aishihik First Nations as well as the Little Salmon Carmacks First Nation. The administration building and the carpenter shops were retro-fitted to the district heating system by adding hot water radiators, while the forced-air furnaces were retained as back-up systems. The Laundromat and health services building were built after the district heating plant and were therefore designed specifically to use the district heating system.

A recent forest fire in the region has meant that there is an abundant, supply of wood at relatively low costs. The Band typically consumes about 100 cords<sup>4</sup> of wood annually, which is supplied by Band members on 10-cord contracts. The Band maintenance staff is responsible for chipping the wood and storing it beside the boiler building, where it is automatically fed into the boiler by a conveyor as needed. The district heating system also has a back-up fuel oil boiler. Wood boilers are able to operate at similar efficiencies with wood of varied moisture content. Problems with wood systems are usually limited to the feed system, but they can be fed manually if necessary and so back-up systems are rarely used. The price of wood is approximately \$90/cord, and so the fuel costs for heating these buildings is roughly \$9,000 per year.

### **7.2.3 Lessons and Successes**

The community is investigating expanding the project to include the youth centre as well as the 16 residences. The CANMET Energy Technology Centre found that this expansion might not be economically feasible, due to the additional costs of pipelines to connect all of the buildings. The results were fairly sensitive to the displaced fuel costs, and will therefore become more attractive if fuel prices increase significantly.

The current system is saving the Band money by reducing fuel purchases. Furthermore, the system provides local employment through the harvesting and chipping of the wood supply. Chippers require routine maintenance and regular sharpening in order to avoid large chips that can jam the boiler's feed system.

More information about this district heating system can be found by contacting the Kluane First Nation.

Kluane First Nation  
Box 20  
Burwash Landing, YK Y0B 1H0      Ph: (867) 841-4274

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<sup>4</sup> One *cord* of wood is 4 feet high by 4 feet wide by 8 feet long.

## **8 OTHER FIRST NATIONS AND NORTHERN COMMUNITIES PROJECTS**

### **8.1 ENERGY EFFICIENCY**

#### **8.1.1 Housing Retrofits**

Vuntut Gwitchin First Nation, Yukon  
Kahnawake Mohawk Territory, Québec  
Mohawks of the Bay of Quinte, Ontario

#### **8.1.2 Waste Heat Recovery**

Fort McPherson, Northwest Territories  
Fort Severn First Nation, Ontario  
Inuvik, Northwest Territories

### **8.2 RENEWABLE ENERGY PROJECTS**

#### **8.2.1 Biomass District Heating**

Champagne and Aishihik First Nations, Yukon  
Kluane First Nation, Yukon  
Grassy Narrows First Nation, Ontario  
Haines Junction, Yukon  
Little Salmon Carmacks First Nation, Yukon  
Oujé-Bougoumou Cree Nation, Québec

#### **8.2.2 Small Hydro**

Champagne and Aishihik First Nations, Yukon  
Deer Lake First Nation, Ontario  
Dogrib Power Corporation, Northwest Territories  
Ojibways of Pic River, Ontario  
Stikine Nation, British Columbia

#### **8.2.3 Solar Energy**

Rankin Inlet, Nunavut  
Fort Smith, Northwest Territories  
Iqualuit, Nunavut

#### **8.2.4 Wind Energy**

Piikani First Nation, Alberta  
Rankin Inlet, Nunavut

## 9 ALPHABETICAL LIST OF ACRONYMS

**ABC** – Aboriginal Business Canada  
**ANCAP** – Aboriginal and Northern Community Action Plan  
**CA** – Conservation Authority  
**CanMET** – Canada Centre for Mineral and Energy Technology  
**CEAA** – Canadian Environmental Assessment Agency (or Act)  
**CP** – Certificate of Possession  
**DFO** – Department of Fisheries and Oceans  
**EA** – Environmental Assessment  
**ECP** – Environmental Certification Program  
**EDO** – Economic Development Officer  
**ERES** – Electricity from Emerging Renewable Energy Sources  
**FNCR / BCR** – First Nation Council Resolution / Band Council Resolution  
**FNLMA** – First Nation Land Management Act  
**HRDC** – Human Resources Development Canada  
**IMO** – Independent Market Operators  
**INAC** – Indian and Northern Affairs Canada  
**MIP** – Market Incentive Program  
**MNR** – Ministry of Natural Resources  
**MRIF** – Municipal Rural Infrastructure Fund  
**NOEDF** – Northern Ontario Economic Development Fund  
**NRCan** – Natural Resources Canada  
**OFNTSC** – Ontario First Nations Technical Services Corporation  
**ONAS** – Ontario Native Affairs Secretariat  
**OPG** – Ontario Power Generation  
**OSEA** – Ontario Sustainable Energy Association  
**PSAB** – Procurement Strategy for Aboriginal Business  
**PTO** – Provincial Territorial Organization  
**PUC** – Public Utilities Commission  
**REDI** – Renewable Energy Deployment Initiative  
**REED** – Renewable Energy and Electrical Division  
**SD** – Sustainable Development  
**WPPI** – Wind Power Production Incentive

## 10 A FINAL WORD...

A renewable energy project is one way that the environmental, economic and cultural aspirations of a First Nation can be fulfilled. Projects must be carefully considered, thoroughly researched, properly financed and well managed. There are First Nations who have already done it. There is a significant number of First Nations who are in the process of doing it – you can too. Good luck, and *more power to you!*