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UNIVERSITY

# **Carving their Energy Development Path through the Transition – Poplar Hill First Nation**

**Roopa Rakshit  
Ph.D. Candidate &  
Energy Planning Specialist, OFNTSC**

;



- 6 First Nation communities
- Total population: 2800
- Fly-in communities
- Off-grid communities

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**Community Research Planning Guidebook**

Funded in part by The Government of Canada Aboriginal Funds for Species at Risk  
**Canada**

The objective of the community research-planning guide is to prepare researchers to visit a KO affiliated community. It is a compilation of experiences and recommendations offered by community members and leaders, KO staff and community-based researchers. The community contact is the best person to consult to ensure the visit is successful (low impact and highly beneficial to the community). Community visits should be a rewarding and learning experience for researchers and community members alike.

**Objective**

The research objective should be inline with the following: To visit a First Nation community to meet with leaders, elders, program workers, youth and community members to improve First Nation access to information and research capacity that will improve programs and services and ultimately improve quality of life in the community.

The researcher is in the community to generate discussion, get people thinking and talking about how to improve services and programs. The researcher is not there to extract information to provide to an outside source.

## Home

The Chiefs of Keewaytinook Okimakanak created the Research Institute (KORI) to develop a network of community researchers to conduct and promote priority research issues in their First Nation communities. KORl supports community-driven research through training mentorship along with academic partners across Canada. The KO Research Institute's mandate is to change the way First Nation research is conducted within its sphere of influence so that the leadership has the information it needs to make decisions.

<http://research.knet.ca/?q=node/121>

## Environmental Concerns

1. Produces substantial **GHG emissions**, contributing to climate change
2. Fuel must be **transported** by airplane, truck (**winter roads**) or barge, leading to risks of **fuel spills**.
3. Fuel spills take place while the fuel is being transported and **stored**
4. Fuel tank leaks contaminate soil and groundwater

## Social Concerns

1. Generators are **noisy**
2. Emissions from diesel generators contribute to **health problems**
3. **Black-outs** can occur if **diesel generators** break down or are not properly maintained-  
**dangerous in cold, remote locations.**

## Economic Concerns

1. Cold, northern locations: high demand for diesel and heating fuel contributes to high **energy expenditures.**
2. High **transportation costs**
3. **The high cost of energy and energy supply issues in off-grid communities can deter new businesses, limiting future economic opportunities**



# Remote First Nations leading the way with renewable energy

BY ROOPA RAKSHIT  
FOR THE CHRONICLE-JOURNAL

**N**ESTLED in the boreal landscape of Northwestern Ontario, the people of Poplar Hill First Nation live along the banks of the Berens River. Families travel the land and the waterways to practise traditional skills.

The First Nation, like other remote communities, is built within a reserve that is dependant on electricity generation to meet its energy needs. The landscape is beautiful; by contrast, when entering the community, there are rows of fuel storage tanks and diesel-powered generating stations adjacent to the airport. These tanks store diesel that is trucked in by winter road or flown in at the cost of approximately \$1 million per year for a community of 400 people.

According to a socio-impact analysis report published in 2015 for Wataynikaneyap Power, it is estimated that a total of 115 litres of diesel fuel are burnt every minute in Northern Ontario's remote First Nation communities, adversely affecting the environment, individual health, socio-economic opportunities and overall well-being.

First Nations with growing populations are challenged to increase fuel storage and energy generation capacity to meet an ever-increasing demand for electricity.

"Our community is growing and the diesel generators can't keep up", says Dennis King, a council member from Poplar Hill, and adds that the lack of reliable power is compromising community development, infrastructure, and basic needs like good medical care, food, and shelter.

The energy crisis prevalent in the six First Nation communities under the Keewatinook Okimakanak (KO) Tribal Council is mirrored in 140 First Nations across Canada.

There are 25 remote off-grid First Nations in Northwestern Ontario that rely solely on diesel for the production of heat and electricity. In Northern Ontario, electricity production and distribution is handled by the provincial utility, Hydro One Remote Communities Inc.



RENEWABLE  
ENERGY

(HORCI), and nine communities are currently served by community-based utilities or independent Power Authorities.

Remote locations, the absence of all-season roads, off-grid status, and diesel dependency are leading to acute energy insecurities. Also, as climate change progressively and significantly affects weather patterns, remote communities are feeling the impacts. With shorter and warmer winters and more variable temperatures, winter roads are available for shorter durations and are mostly unreliable. Thus, communities are seeking alternatives to their dependence on diesel generation.

**T**HE KO communities are leading the development of alternative energy sources and are committed to community energy planning. They are pursuing energy-saving opportunities such as energy efficiency upgrades, energy conservation and investing in alternative sources of energy.

"The First Nations have always been innovative and have built unique solar installations to relieve their dependence on diesel generation," says Franz Seibel, the Director of Research at the KO Research Institute (KORI). "There are First Nation processes, values and terms related to energy and renewables that are understood in the language and cultural context that can be described for the purposes of technical design."

KORI is mandated to support the KO communities in enhancing community literacy on research and economic development planning. A key outcome expected is building local capacities to make informed decisions to undertake renewable energy projects. Efforts are un-

derway to develop bilingual tools, online educational modules, animations, posters, and flyers.

A KORI facilitated survey conducted in these communities highlighted a general level of awareness on renewable energy and considered its development a priority to diversify the energy mix. Solar power, wind turbines and run-of-the-river hydroelectricity ranked high in their preference of renewable options.

Presently, biomass is a less familiar option that requires further understanding of the source of fibre, processing, and how it could be implemented in a remote First Nation without timber operations.

The First Nations have been overcoming challenges related to implementing renewable energy projects. They range from raising the initial investments, efficiency and reliability factors, building local capacities, keeping pace with emerging technologies, and finding the right partners.

**A**MIDST ongoing debates about environmental protection versus development in the nation-building decision processes, Ontario acknowledges that climate change affects remote reserves and has encouraged First Nation-led solutions to address energy insecurities.

In early August, Wataynikaneyap Power, a transmission company owned by 21 First Nations, was designated by Ontario to make application to build an 1,800-kilometre power line linking 17 remote First Nations communities to the provincial power grid (see [www.wataynikaneyap.ca](http://www.wataynikaneyap.ca)).

Fort Severn First Nation is one of several other communities that are out of reach of the transmission line, but is exploring ways to minimize diesel dependency and retrofit its

diesel-generated microgrid with renewable energy sources. Fort Severn currently generates 20 MW through solar power and additional 300 MW is under construction.

Successful renewable energy development examples from the KO communities include Deer Lake supplementing its power demand with a 152 MW solar installation on the school roof. The community already benefits from a partnership with HORCI in a 450 kW run-of-the-river hydro generating station constructed

on the Severn River in 1998. The community's leadership has stressed the need to invest more in renewable energy.

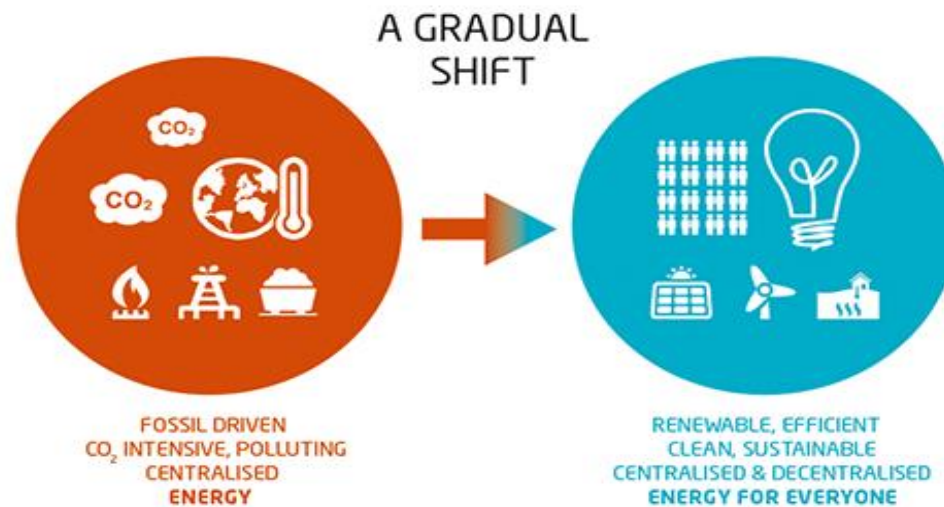
Keewaywin and North Spirit Lake First Nations benefit from 20 MW solar generators and McDowell Lake First Nation generates 10 MW of solar power. Poplar Hill's fuel tanks are balanced by the solar panels covering the roof of the community's newly renovated hotel.

First Nations are leading the way in remote community renewable energy. "Renewable energy can be First Nation-owned

and operated, when we build meaningful partnerships and local capacity," says Geordi Kakepetum, NCC Development's CEO (see [nccsolar.com](http://nccsolar.com)), a not-for-profit company owned by the KO member. "Our full potential will be realized only when local capacities are enhanced, policies and programs engage with the First Nations at equal footing, and all stakeholders work in meaningful partnership with First Nations."

*Roopa Rakshit is a Ph.D. candidate, Faculty of Natural Resources Management, Lakehead University. She is pursuing community energy transition planning for the Keewatinook Okimakanak First Nations. Her columns appear monthly.*

*It is estimated that a total of 115 litres of diesel fuel are burnt every minute in Northern Ontario's remote First Nation communities, adversely affecting the environment, individual health, socio-economic opportunities and overall well-being.*



# Energy Transition

A shift from energy generation and consumption systems that reduce consumption and rely primarily on non-renewable energy sources to a more efficient, lower-carbon energy mix.



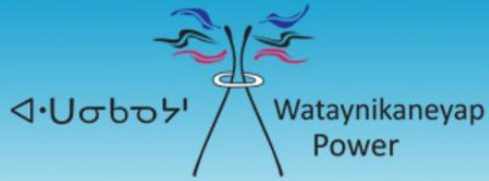
# Energy Transition

Grid  
connection

Renewable  
Energy

Energy  
Education





## Home

Wataynikaneyap Power is a licenced transmission company owned by 22 First Nation communities with the objective of connecting remote First Nation communities, currently serviced by diesel generation in Northwest Ontario. The Transmission Project has been identified as a priority in Ontario's Long Term Energy Plan and Order in Council No. 1158/2016. Continued use of diesel generation to power remote First Nation communities is financially unsustainable and socially unacceptable.

The Wataynikaneyap Transmission Project is an unprecedented undertaking. The first phase, a new 300km transmission line, will reinforce electricity supply into Pickle Lake. The second phase will connect 17 First Nation communities north of Pickle Lake and Red Lake with an estimated 1500km of new transmission line. The total estimated capital cost is \$1.35 billion (\$2015).

PricewaterhouseCoopers (PwC) estimates that the current cost of diesel generation for these 16 remote First Nations communities is \$43 million per year and growing. Building and operating transmission to these communities is expected to save \$1 billion compared to continued diesel generation. In addition, the Wataynikaneyap Transmission Project is estimated to create 769 jobs during construction and nearly \$900 million in social value, including a significant reduction to greenhouse gas (GHG) emissions.

Wataynikaneyap Power has partnered with FortisOntario and RES Canada to develop and operate the transmission facilities. The First Nations will remain majority owners and become 100% owners over time. First Nation communities working together and controlling development of infrastructure within their traditional lands will be a catalyst for greater prosperity and economic self-determination.

On July 29 2016, [Ontario officially selected](#) Wataynikaneyap as the transmitter to undertake the project.

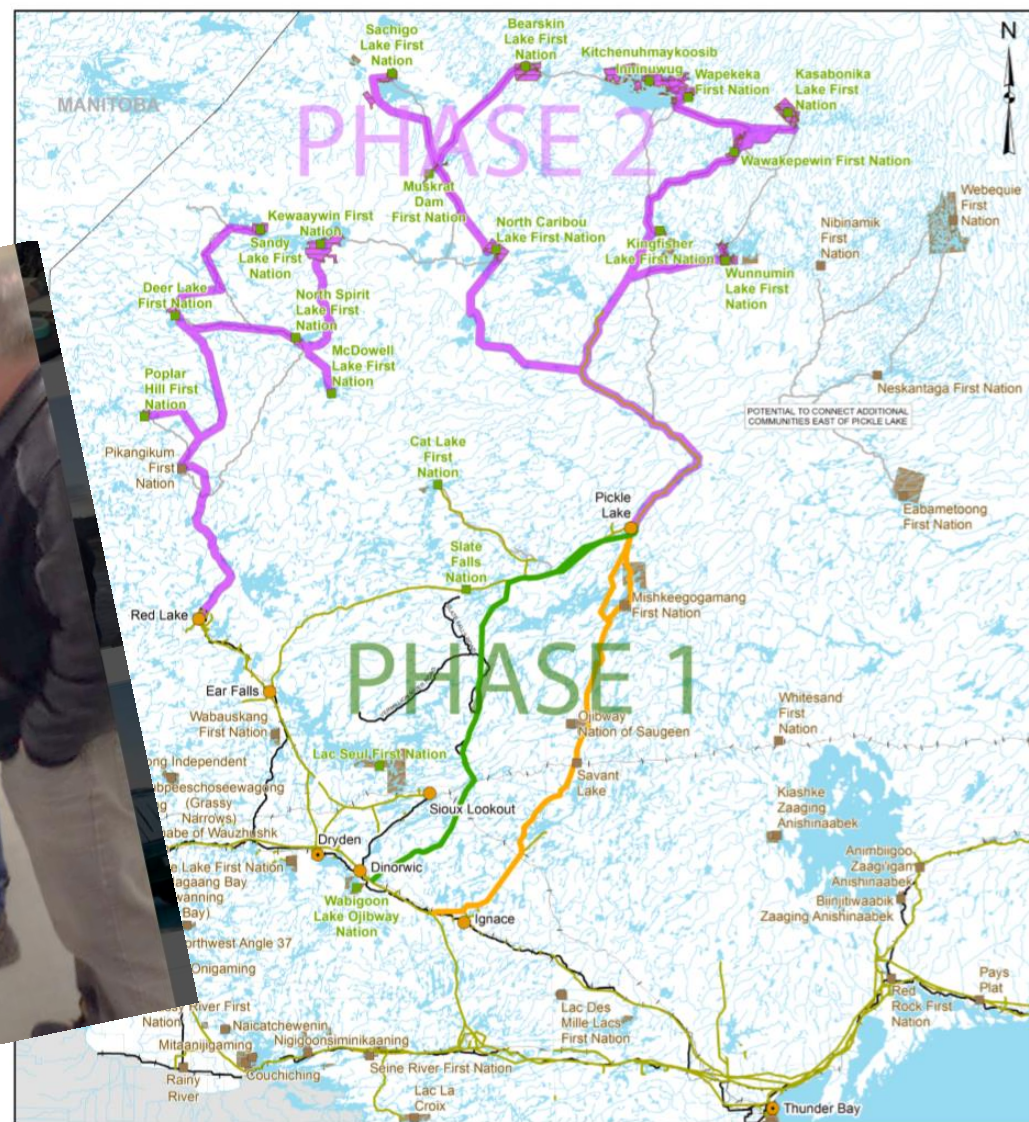
## MAIN

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## MAP







#### LEGEND

- City
- Town
- Wataynikaneyap Power Community
- First Nation Community
- Phase 1 Corridors
  - Preliminary Proposed Corridor
  - Corridor Alternatives
- Phase 2 Preliminary Proposed Corridors
- Existing Electrical Transmission Line
- Major Roads and Highways
- Winter Road
- Railway
- River
- Waterbody
- First Nation Reserve Land



#### PROJECT LOCATION

##### REFERENCE

Base Data - NHR LID, obtained 2016, NTDS  
 Transmission Routes - Provided by GENIVAR and SENES  
 First Nation Communities from Indian and Northern Affairs Canada  
 (www.ainfo-ina.gc.ca)  
 Produced by Golder Associates Ltd under license from Ontario Ministry  
 of Natural Resources, © Queens Printer 2016  
 Projection: Transverse Mercator Datum: NAD 83  
 Coordinate System: UTM Zone 18










# **Remote Electrification Readiness Project**

## **Employment & Community Readiness**





# COMMUNITY CAPACITY & READINESS PLAN: REMOTE ELECTRIFICATION READINESS PROJECT - *Project Pathway*

	Data Collection	Needs	Gaps	Planning	Implementation	
ACTIVITY	<b>Baseline Data Collection (Stats Canada)</b> <b>Community Survey</b> <b>Asset Collection for each Community:</b> <ul style="list-style-type: none"> <li>- equipment</li> <li>- existing businesses</li> <li>- community resources</li> </ul> <b>Community Employers Sheet</b>	<b>Discussions with Power Company:</b> <ul style="list-style-type: none"> <li>- businesses needed</li> <li>- jobs available</li> <li>- skills needed</li> </ul> <b>Researching</b>	<b>-GAPS Analysis of Data Collection &amp; Needs</b> <b>-Discussions with Education Providers</b> <b>-Quantify Training Options &amp; Programs</b> <b>-Identify Funding Options</b>	<b>Community Worker (CW) Training</b> <ul style="list-style-type: none"> <li>- provide communication tools</li> <li>- support CW's in: engaging with their communities about the Watay Project &amp; creating a Community Vision</li> </ul> <b>Community Readiness Framework Created</b>	<b>Strategy</b>  <b>Project Monitoring</b>  <b>Evaluating &amp; Adjusting the Community Readiness Plan</b>	ACTIVITY
QUESTIONS	What skills do Community members have?  What type of work are members interested in? What type of Education and Training do members have? Who are the employers in your Community? What resources ("Assets") does your Community have? (equipment, buildings, etc.) What businesses are there in your community? What businesses & organizations currently employ community members?	What jobs will be hired for construction of the Powerline? What businesses will be needed as Subcontractors for the construction of the Powerline? What other opportunities will be available? What Training will be needed? What Funding is available?	 <b>GAPS are the difference between what is needed, and what currently exists:</b> <b>Training &amp; Education Level:</b> What Training and Education Level do Community members NEED, and what do they HAVE? Who can provide the needed Training? Who will Fund this Training? Where will the Training be held?	<b>Training &amp; Education Level:</b> Plan Courses and Training to fill the Gaps <b>Businesses:</b> Plan Business mentorship training? <b>Community Vision Statement:</b> What is your Community's Vision for the Future regarding the Watay Powerline Project? <b>Community Readiness Framework:</b> What is your Community's mission, goals & objectives for the future? Areas of potential community growth? What are your Community's priorities? What is your community's strategy/plan for being ready for Electrification (being connected to the power grid)? What is the regional plan regarding Electrification Readiness, and how does your community fit in?	<b>Strategy:</b> What are the actions we will take to implement the plan?  What funding applications should our community apply for? What are the individual projects that each community can work on one at a time? What is working well for our community plan, and what do we need to adjust?	QUESTIONS
RESULTS	<b>Survey Results - Summary &amp; Analysis</b> <b>Phase 1 Report - Information Summaries</b> 	 <b>Power Company Jobs Matrix Poster</b> <b>Phase 1 Report - Needs Analysis</b>	<b>Phase 1 Report - GAPS Analysis</b> <b>Community Profiles with Assets and Local Employers</b>	<b>Readiness Action Plan</b> <b>CW Training Workshop Meetings &amp; Report</b> <b>CW Communication Tools (posters, presentations, reference materials)</b> <b>CW in-community hands-on training &amp; support, and Summary Reports</b>	<b>Final Report</b> <b>Monitoring indicators developed</b> <b>Project Process Evaluation Indicator Developed</b>	RESULTS

# Are you ready for the Transmission line?



## COMMUNITY CAPACITY & READINESS PLAN: REMOTE ELECTRIFICATION READINESS PROJECT - COMMUNITY SURVEY RESULTS:

### What is this project about?

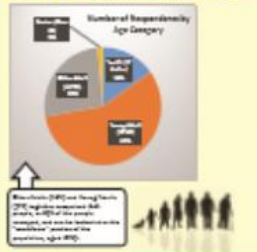
The goal of the Remote Electrification Readiness Project (RERP) is to prepare the Watainikaneyap Power communities for major development projects including the transmission line construction.

The Community Survey is the first step of the project. It was developed during a number of workshops in the fall of 2022 with the larger 2023 working group as their final output. The survey was administered by Community Volunteers in the participating communities starting in December 2022, largely as paper-based surveys, with the information eventually being entered into the online survey database (OpenSurvey) by June 30, 2023.

This online survey database and interface was designed by W2T, with all Community Volunteers assigned a login to enter completed surveys into the database, and the system for community members to check if it was the survey online. The survey results were downloaded for compilation and analysis by Joseph Davidson, the consultant that is active with this project.

This page displays some of the results of the compilation of survey results, their analysis, and some raw statistics (Demographic data). The graphs to the right of the text explain the data, and the tables at the bottom of the page provide the raw data. The survey results were downloaded for compilation and analysis by Joseph Davidson, the consultant that is active with this project.

### SURVEY DEMOGRAPHICS

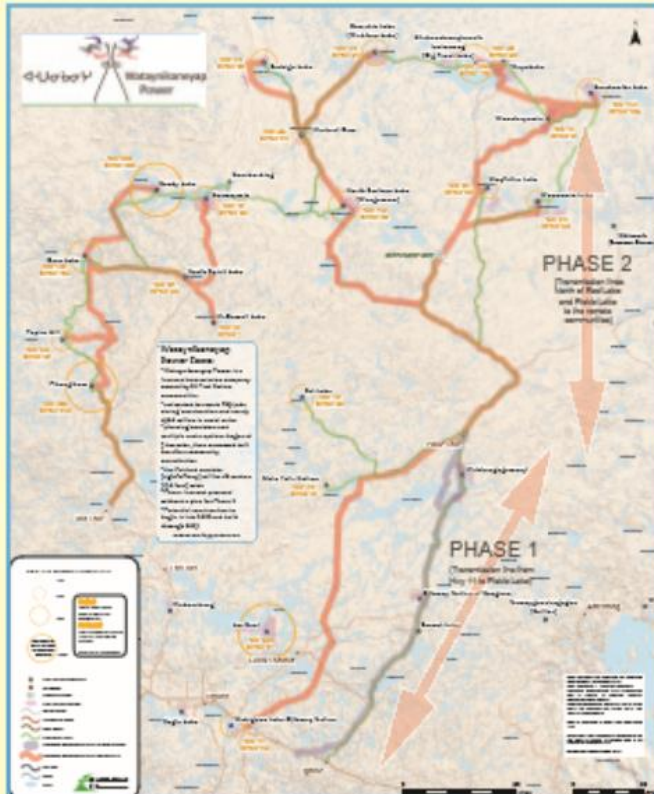


### SURVEY QUESTIONS: Skills

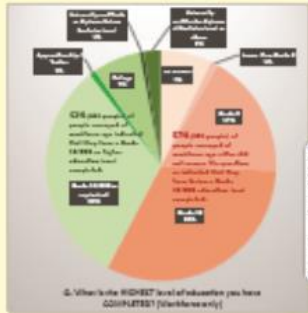


Table with 5 columns: Community, Total Population, Total Households, Total Employment, Total Unemployment. Rows list various communities.

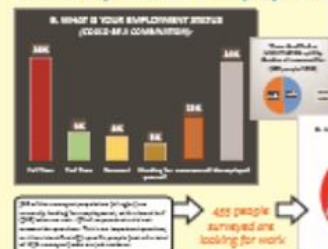
Percentage of Total Community Population (excluding communities) June 30, 2023



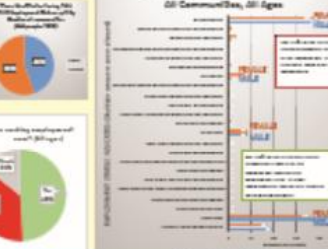
### EDUCATION



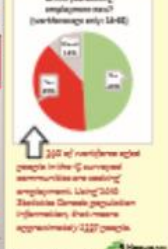
### SURVEY QUESTIONS: Employment



### EMPLOYMENT STATUS, BY GENDER



### What is your employment status?







# 2017

## Community Profile & Asset Inventory Poplar Hill First Nation



**Prepared by:**

Hoshizaki Development

220 Archibald Street. N, Thunder Bay, ON

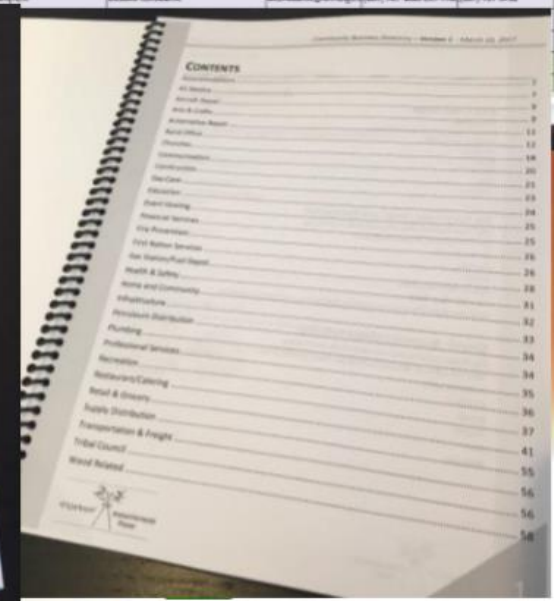
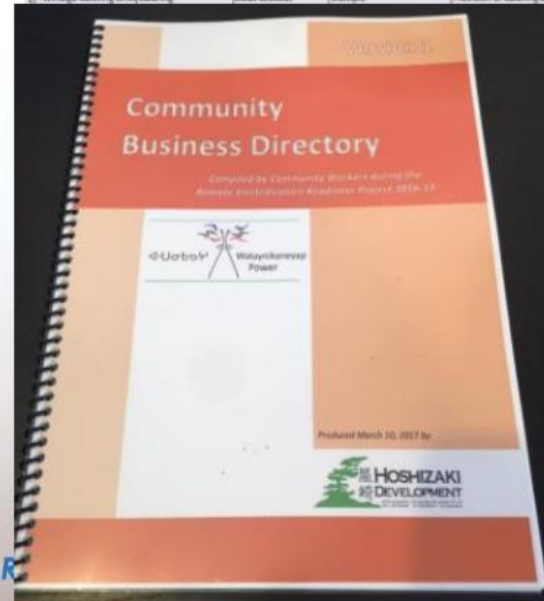
January 31, 2017



# Business Directory

- Through the Assets Collection, Community Workers compiled local businesses
- all Asset data is in Excel databases
- We have assembled into a **Business Directory Version 1**, that can be further expanded
- available today

Business Name	Business Type	Location	Community/FN Org.	Services Offered	Products Sold	Contact Person(s)/Manager	Email	Phone Number	Fax
Hillside Repair	Automotive Repair	Couchiching First Nation	Couchiching First Nation	Small Engine Repair	N/A	Yvonne Bruyere		867-275-0929	
Deroaud Motor Prods	Automotive Repair	Kemora	Kemora	Car and Truck Automotive	N/A	Neil Deroaud	neil@deroaudmotors.com	867-340-8242	867-340-8267
Altheim's Repair	Automotive Repair	Thunder Bay	Thunder Bay	Automobile, Heavy Truck	N/A	Mark Savels	mark.savels@gmail.com	867-523-1558	
Thomas J. Pelletier/Inc	Automotive Repair	Thunder Bay	Thunder Bay	Repair and Maintenance	N/A	Tom Pelletier	tom@pelletierauto.com	867-623-4532	867-623-4534
Deroaud Motor Prods	Automotive Sales	Kemora	Kemora			Authorized Dealer of Nissan Deroaud	neil@deroaudmotors.com	867-340-8242	867-340-8267
Kingfisher Lake Band	Band Office	Kingfisher Lake	Kingfisher Lake					867-532-2867	
Wapetika First Nation	Band Office	Wapetika	Wapetika					867-537-2123	
Socialbank	Banking	Seardmore	Lake Nipigon Ojibway First Nation	Banking	N/A			867-575-2025	
Nemiskew Bookkeeper	Bookkeeping	Thunder Bay	Thunder Bay	Bookkeeping, Office Work	N/A	Sherry Abbottsaway	sherrya@hotmail.com	1-867-622-2885	
Maximate Inc.	Bookstore	Brux Lockout	Brux Lockout			Aboriginal Art & Literature Patricia Nadeau	books@patnngwen.com	204-769-2839	204-489-3889
Traditionally Speaking	Business Seminars	Thunder Bay	Thunder Bay	Motivational and Business	Motivational and Business	Landi Boucher	landi.boucher@shaw.ca	867-385-8949	
DCM Busing	Busing	Nipigon/Minikaming	Nipigon/Minikaming First Nation	Busing	N/A	Deanne Morrison		867-482-9736	
Alor-Ron Construction	Carpentry	Thunder Bay	Thunder Bay	Carpentry Work, Windows	N/A	Ron Farber	alor-ron@shawtel.net	867-344-5822	
Cree Guest	Catering	Cochrane	Cochrane	Event Planning, Catering	N/A	Tina Gagnon	tina_gagnon@hotmail.com	705-275-4441	
The Lunch Pad	Catering	Cochrane	Cochrane	Business Catering, Lunch	N/A	Monique Bellaire	thelunchpad277@yahoo.com	705-382-4627	
Whitliger Catering Ltd	Catering	Brux Lockout	Multiple	Preparation of Catering and	N/A	Dianne Kordbank	dianebank@hotmail.com	867-737-1345 EXT 7705	867-737-1722



Remote Electrification Readiness Project: **Final Report**

# Energy Education

## 3. Online Training Curriculum Development with KORI

<http://wataytraining.knet.ca>

Module 1: How is energy made?

Module 2: Energy is all around us!

Module 3: Energy Sources: Renewable Energy

Module 4: Energy Sources: Non-renewable Energy

Module 5: Energy Generation in Canada and Ontario

Module 6: Electrification in Remote, Off-grid Communities in Canada

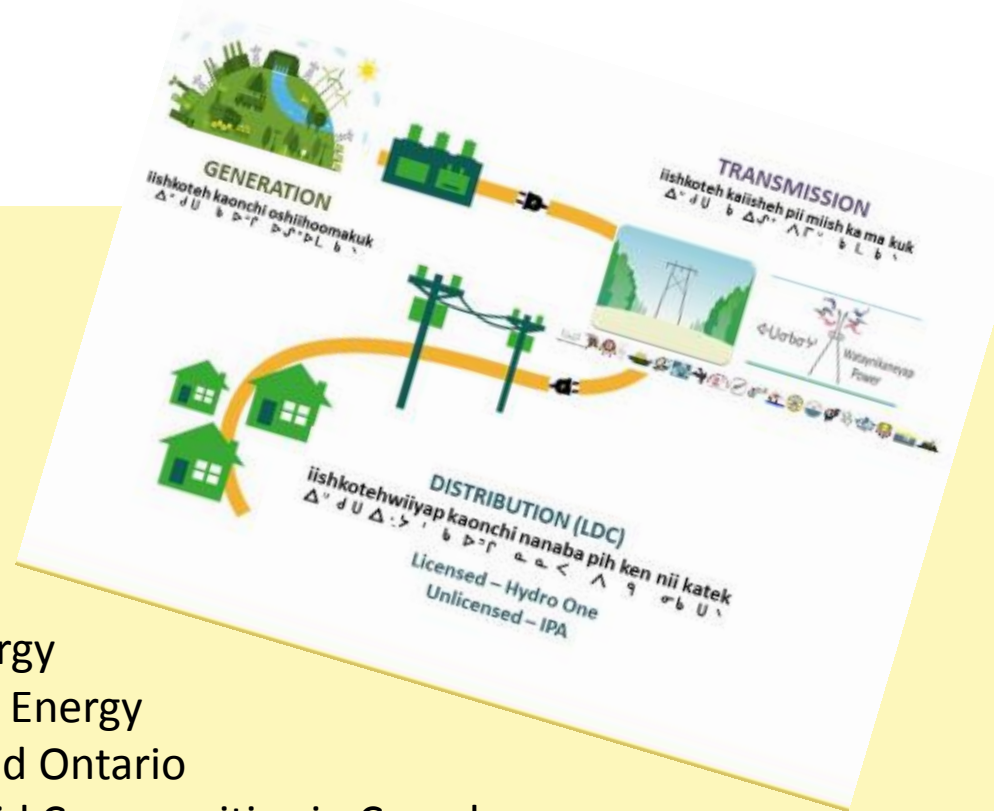
Module 7: Solar

Module 8: Wind

Module 9: Hydro

Module 10: Know Your Bills

## 4. Energy Planning Guidebook







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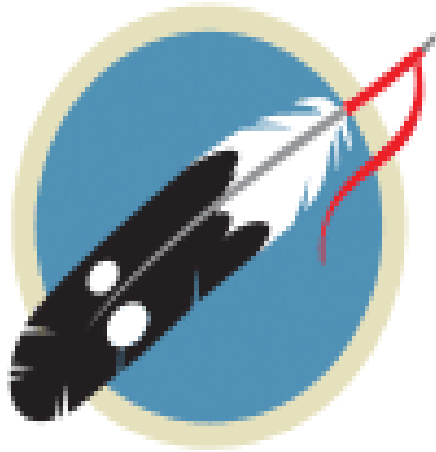
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[franz.seibel@knet.ca](mailto:franz.seibel@knet.ca)

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- Hoshizaki Development, Ed and Gail,
- Wataynikaneyap Power



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Thank you!  
More in person!