



Kiashke Zaaging Anishinaabek – Gull Bay First Nation

# Mashkawiziwin

Clean Energy Future

# Newsletter

Winter 2018 Edition





# Contents

Winter 2018

03

Contents

04

Words from the  
Energy Manager

05

Words from the  
Coordinator &  
Intern



06

Update on the  
Micro Grid Project

07

Update on the  
Micro grid Project

08

What has the  
Energy Team been  
up to



09

Applegwon Films  
& Epica Pictures  
Filming

10

Hydro Power

11

Westfort  
Productions  
Introductions



12

Clean Energy  
Event:  
Energy Expert

13

Clean Energy  
Event:  
Bingo

14

Clean Energy  
Activities

15

Clean Energy  
Activities





# Words from the Energy Team



## From the Energy Manager

Boozhoo Everyone!

Welcome to the Winter Edition of the Mashkawiziwin Clean Energy Future Newsletter! Hope you're keeping well and warm this winter.

The Kiashke Zaaging Anishinaabek Solar Micro-Grid is coming along splendidly. All the solar panels are up and, with the Battery Storage and E-House (Control Room), the system is almost ready to feed solar power to the Community. With the last components and final inspections to be done, the Solar Micro-Grid should be ready to go on line this Spring.

The members of Gull Bay should be very proud to be the first in Canada to build and use a fully integrated renewable energy and storage micro-grid system. To know we are doing our part to help Mother Earth protect her environment by reducing greenhouse gases through diesel reduction, less fuel deliveries, lowering the chance of spills in our creeks and rivers, while having cleaner air to breathe just makes sense.

Sharing the knowledge gained on this project, we can assist other indigenous and remote communities find their way on this path to reduce their dependency on diesel. As more communities come on board, like this winter, it becomes a snowball effect.

Giizis Energy is the new name for the Solar Micro-Grid site and, thanks to everyone for their submissions, all were very good. Have a wonderful winter and, remember as Spring comes, MORE SUN = MORE POWER!

Miigwetch – Thank you for your support in this very important project.

**Councillor Kevin W. King**  
**Kiashke Zaaging Anishinaabek**



**Gull Bay First Nation**  
**Micro Grid x Clean Energy**

# Words from the Energy Team



## From the Energy Coordinator

Boozhoo, Good day Gull Bay First Nation!

Grab your pitoozhkins (long-johns) It is now the Winter 2018 and thanks to the Polar Vortex, it's proven to be a chilly one.

We are almost done constructing the Giizis Renewable Energy Generating facility (formally known as the KZA Micro Grid Project) however, testing and commissioning has started, and well on it's way. It is important that KZA gets the project professionally assessed to ensure the project asset is built to spec and will be 100% operational when it is transferred to KZA ownership. That way we get a sharp fully operational solar renewable energy-storage micro grid to power our Community with clean solar. This is exciting! Plus, there is a lot of interest across Canada in other First Nation, Inuit and Metis Communities who see this as an option to reduce or even eliminate the use of diesel in their home Communities. Now that would be awesome. We want to do the best we can with what we got so that our future generations can flourish and with harness of this clean power, the future for our next generations can be preserved but we got to work together, keep steady and stay sharp.

Have a safe and warm winter. Hope to see you at our Clean Energy Nights.

Baamaapii

**AJ Esquega**



## From the Energy Intern

Hello,

Welcome to our Winter 2018 Edition of the KZA\_GBFFN Mashkawiziwin Clean Energy Future Newsletter, we have included some helpful information with regards to our Clean Energy events, whether it be the Jeopardy or our new event which is set to debut in February called "who wants to be an energy expert" which. Is very similar to who wants to be a millionaire.

Enjoy this newsletter! ☺

**Travis Penagin**



# Update on the Micro Grid Project



November 22, 2018

The Battery Energy Storage System arrives in Gull Bay



December 10, 2018

The Electrical House (e-house) arrives in Gull Bay



# Update on the Micro Grid Project

December 10, 2018

Not only did the E-House arrive in Gull Bay, but the batteries also arrived. AHEAD OF SCHEDULE!



December 10, 2018

Apple Wagon Films and Epica Pictures were in the community, filming the E-house arrival and development stages for the Microgrid Video

## What's Happening this Spring

- AJ and Travis will be mentoring the grade 5/6 and 7/8 students who are working on some exciting Youth Fusion Projects that we can't wait to check out! We are looking forward to it!
- Travis has developed "Who Wants to be an Energy Expert!" for the Community. Be sure to check it out to have some fun and learn about renewable energy too!
- Alltrade will be wrapping up construction of the micro grid project. It will be fully assembled by mid-March.
- Independent Engineer reviews have started and will carry on until the snow melts. This is important as KZA would like to ensure all components are built to specifications and be fully operational before it becomes Gull Bay First Nations.
- Westfort Productions will be back for filming of testing and commissioning of the micro grid asset.
- Volunteer Firefighter training designed specifically for our solar and battery energy storage infrastructures will take place in late March.
- Giizis Energy Going Live Ceremony! The moment we turn off the diesel generators and bring on clean solar power to the Community! Date to be determined, but looking to be Spring 2019.
- KZA Community Energy Plan is still being developed. More updates soon.



# What has the **Energy Team** been up to



## November 26, 2018

Well isn't that nice! A welcome greeting from Synchro to Councillor Kevin King and AJ Esquega as they arrived to check out the Gull Bay First Nation Micro Grid Project E-House at Niagara Falls, Ontario before it gets shipped to Gull Bay. The E-house is expected to arrive in the second week of December.





# Apple Wagon Films & Epica Pictures filming



"I feel that this is a great step into the future and to help the reduction of using fossil fuels. Something like this is gonna benefit the community in so many ways. I was honoured to be apart of this project and to see the process of what it was delivered."

- **Damien Gilbert**  
*Epica Pictures*



## Hydro Power

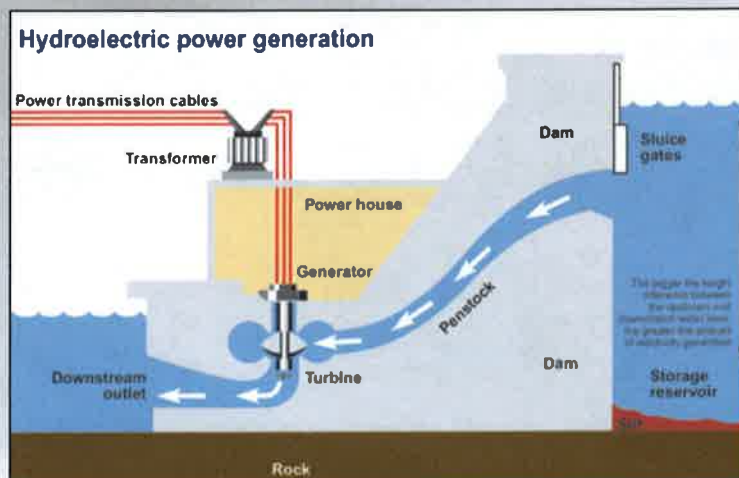
Hydro power system can be either run-of-river systems or require dams and reservoirs. Small hydro plants have modest reservoirs with water levels upstream near or slightly higher than spring runoff levels. Some run-of-river stations have structures to channel the flow of water to the generating plant.

Hydro power involves the channeling or diversion of water into a penstock (or pipe) which then flows into turbine/s which generates power. Water is discharged back into the waterway at the end of the powerhouse. The generating capacity of a plant is a formula that includes: a) the **Mass** of water pushing into the penstocks; b) the **Quantity** of water flowing through the penstocks into the turbines; c) the **Head** (or drop) from water levels upstream to the turbines; and d) the **Pull** of water downstream of the powerhouse.

A conventional small hydro project design and technological approach includes the following features:

1. An overflow **Weir or Dam** located upstream of the generating plant including a **Reservoir**.
2. A **Control Structure** channeling water into the penstock including **Sluice Gates**.
3. The **Penstock**, which may include a **Power Canal or Pipe**.
4. The **Power House** with electricity generating turbines.
5. A **Transformer** which connects power generated with **Transmission Lines**.
6. A **Tailrace or Downstream Outlet** where water flows from the Power House back into the waterway.

The schematic below portrays a typical small hydro facility. Canadian engineering and energy companies have substantial experience with small hydro development.



Prepared by Lumos Energy  
Clean Energy Advisor to Kiashke Zaaging  
Anishinaabek – Gull Bay First Nation



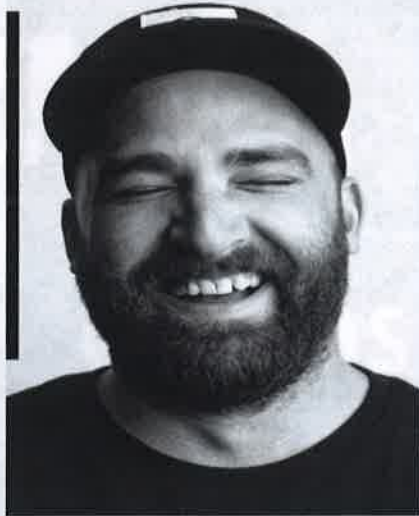


# Westfort Productions Introduction



WESTFORT  
PRODUCTIONS

Westfort Productions is a full-service video production company and digital marketing agency based in Thunder Bay, Ontario.



## Matt Popowich

As a gemini and an attention starved middle child, Matt comes by his need for your approval on his work honestly. He is the creative and technical engine behind the Westfort Productions brand. Never afraid to get his hands dirty in the pursuit of perfection, Matt is fearless in his passion for video – his drive matched only by his imposing physique and impressive beard cultivation.

## Bryan Popowich

In a previous life, Bryan spent 10 years as a Television Producer, learning the in's and outs of production management, client relations and business operations. Now, Bryan is essentially the air traffic controller of Westfort Productions, keeping Matt's crazy ideas on course so they don't crash into each other, blow up and rain down in a fiery hell.





C L E A N   E N E R G Y

# EVENT NIGHT



# JEOPARDY!

**TUESDAY, FEBRUARY 26 2019**

**RECREATION CENTRE**

**6:00PM – 8:00PM**

THIS IS A FREE EVENT, SO COME  
ON DOWN WITH THE FAMILY FOR  
SOME CLEAN ENERGY FUN!

POPCORN AND JUICE WILL BE AVAILABLE





**Kiashke Zaaging Anishinaabek  
Gull Bay First Nation**

**March Break  
Activities  
2019**

**March 11-14**

**See the March 2019  
KZA\_GB FN Newsletter**

# Clean Energy Activities

I can rush like a river. I can roll like a wave.  
I'm pretty powerful. You build a dam to hold me. I  
flow down, get out of my way!

Who am I? \_\_\_\_\_

I can be a breeze. I can be some king of strong  
typhoon. I can dry your clothes if you hang them in  
rows. I'm what you all renewable, happy and free!

Who am I? \_\_\_\_\_

I'm all about light and you can't see much of me at  
night. You see me strongest at noontime. Don't go  
to near me! I am the strongest of the Energy  
Sources.

Who am I? \_\_\_\_\_

## Answer Key from the Fall 2018 Edition ▼ Newsletter ▼

1	6	9	5	7	3	4	8	2
7	8	5	9	2	4	1	3	6
3	2	4	6	1	8	7	9	5
8	5	1	3	4	6	9	2	7
6	4	7	8	9	2	3	5	1
2	9	3	1	5	7	6	4	8
4	3	8	7	6	5	2	1	9
5	1	6	2	3	9	8	7	4
9	7	2	4	8	1	5	6	3

I come from OLD dinosaur bones. I've been around  
for hundreds of years. I'm the top source of energy  
you know...so get on your car and I'll make you GO!

Who am I? \_\_\_\_\_

I all about life since I was once alive. Some people  
call me waste. I'm so "everyday materials" but when  
harness can give lots of energy. I'm renewable, too!

Who am I? \_\_\_\_\_

## Answers to the Questions from the Fall 2018 Edition Newsletter

Q. What did the light bulb say to the generator?  
A. **I really get a charge out of you**

Q. How is energy conservation like a baseball team?  
A. **They can both use a switch hitter**

Q. What did the solar cells say to their cloudy boss?  
A. **We need rays**

5					4		8	2
			1			9	5	
		6			3			
3				9				8
	6		5					
				2		7		
	4					1		6
9	5				1			

Difficulty Level: 6/10

**DID YOU KNOW:** in 1839, Alexandre Edmond Becquerel discovered the photovoltaic effect which explains how electricity can be generated from sunlight. He claimed that "shining light on an electrode submerged in a conductive solution would create an electric current." However, even after much research and development subsequent to the discovery, photovoltaic power continued to be very inefficient and solar cells were used mainly for the purposes of measuring light.

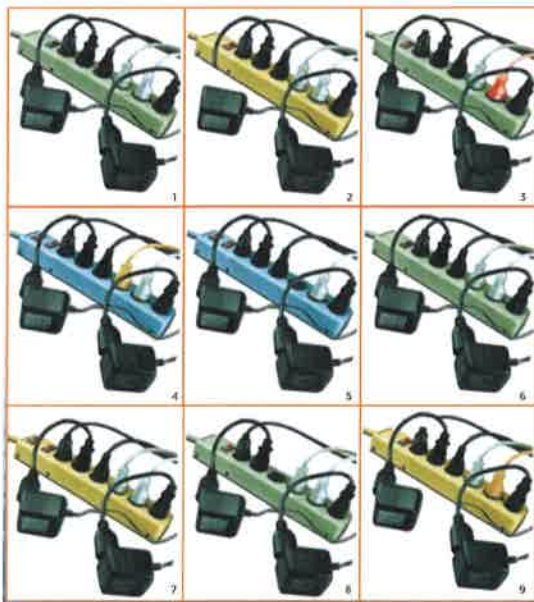


# Clean Energy Activities



**Find the two that match.  
Discover the savings.**

Plug your devices and  
chargers into a power strip  
and turn them all off at once.



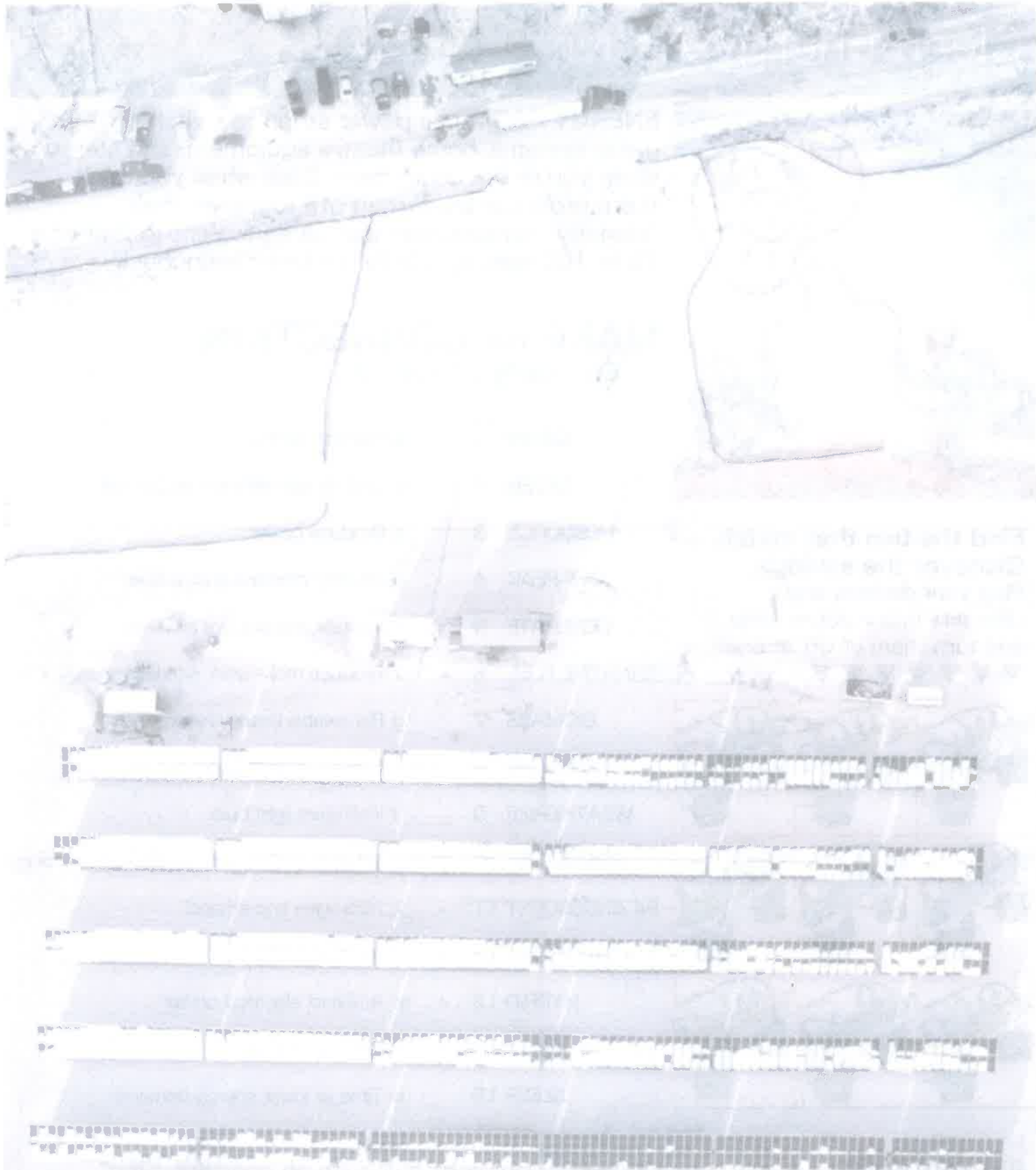
**ENERGY FACT:** use power strips to switch off TVs, game systems, home theatre equipment, and stereos when you're not using them. Even when you think there products are turned off, together, their "standby" **consumption** can be equivalent to that of a 75 or 100 watt light bulb running continuously.

## MAKE THE CONNECTION

**Efficiency = Savings!**

<b>CLEAN</b>	<b>1</b>	<b>a</b> Monitor setting
<b>GREEN</b>	<b>2</b>	<b>b</b> Update with efficient equipment
<b>RESOURCE</b>	<b>3</b>	<b>c</b> Produce power
<b>OFF-PEAK</b>	<b>4</b>	<b>d</b> Healthy, efficient, sustainable
<b>GENERATE</b>	<b>5</b>	<b>e</b> Insulate and prevent air leaks
<b>ALTERNATIVE FUEL</b>	<b>6</b>	<b>f</b> Produce more work with less energy
<b>BIOMASS</b>	<b>7</b>	<b>g</b> Renewable energy resources
<b>EFFICIENT</b>	<b>8</b>	<b>h</b> Organic matter to produce energy
<b>WEATHERIZE</b>	<b>9</b>	<b>i</b> Inefficient light bulb
<b>FOSSIL FUEL</b>	<b>10</b>	<b>j</b> Efficient vehicle with advanced technology
<b>INCANDESCENT</b>	<b>11</b>	<b>k</b> Hydrogen and ethanol
<b>RETROFIT</b>	<b>12</b>	<b>l</b> A natural material
<b>HYBRID</b>	<b>13</b>	<b>m</b> A unit of electrical power
<b>WATT</b>	<b>14</b>	<b>n</b> Coal, oil and gas
<b>SLEEP</b>	<b>15</b>	<b>o</b> Time of lower energy demand

**ENERGY FACT:** Replacing one incandescent light bulb with an energy-saving compact fluorescent bulb prevents 1,000 pounds of carbon dioxide from being emitted into the atmosphere from power plants



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