Kiashke Zaaging Anishinaabek – GULL BAY FIRST NATIONS

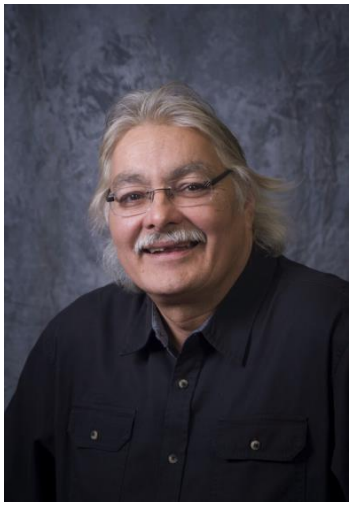
Mashkawiziiwin Clean Energy Future

NEWSLETTER SUMMER 2018

Gull Bay First Nations

Mashkawiziiwin Clean Energy Future

A word from your Energy Manager Councilor Kevin King,



Boozhoo / Hello

Chi-miigwetch for joining us as we present the summer edition of the 'Mashkawiziiiwin Clean Energy Newsletter'. I hope everyone is enjoying their summer.
You may have noticed some activity around the solar site, this is great news, as we are about to enter the construction stage of this Micro Grid Project.
Our community can be proud to know we have Kiashke Zaaging Anishinaabek (KZA) members working on this very worthwhile project.
From shovels in the ground to its completion our members offer cultural knowledge and learn valuable skills, as Canada's first fully-integrated remote renewable energy-storage micro grid begins to rise up, receiving life and energy from the Creator's gift - Giizis (the Sun).
As Summer progresses into Fall, construction site activity will increase such as ground preparation, fencing, and the installation of pilings to hold the racks; along with solar panels, e-house and the arrival of the battery storage building just some immediate examples.
What is also very exciting is the upcoming visits of various Film Crews, to document this first of its kind solar / diesel micro grid. As this hub of activity begins, safety for our membership and guests to our community, is of the utmost importance to Chief and Council So as curiosity builds, please be aware of all safety signs and road closures as equipment moves in and out of the site.
Enjoy the rest of your summer & Miigwetch!

Councilor Kevin W King – Kiashke Zaaging Anishinaabek
Quick Energy Tip:
Use the Barbecue for Summer cooking. No electricity required, and the house stays cool! How about putting your freshly washed laundry out on the line to air dry for that summer breeze smell.

Kiashke Zaaging Anishinaabek – Gull Bay First Nations

Mashkawiziiwin Clean Energy Future

Boozhoo Kiashke Zaaging Anishinaabek!

It's your Mashkawiziiwin Energy Projects Coordinator here, wishing you a very hot and sunny summer. As you are aware, the Community will get a bit exciting this summer with the construction for the Kiashke Zaaging Anishinaabek Micro Grid Project and energy audits for the Community Energy Plan, two very key elements in KZA's Clean Energy Future. So hopefully you find some time for the sun, get by the water and enjoy your summer! Miigwetch.

AJ Esquega
Kiashke Zaaging Anishinaabek – Gull Bay First Nation
Mashkawiziiwin Energy Projects Coordinator
(807) 982-0006
(807) 627-8402
energy@gbfn.ca

Don't forget to like us on Facebook! Search Gull Bay First Nation Micro Grid x Clean Energy.

Boozhoo/Good Day/Ahnee!

Welcome to our summer 2018 Mashkawiziiwin Clean Energy edition. Finally summer has arrives and it's that time again, where the days are longer, So utilize and soak up that sun like how we are rolling here in KZA-GBFN. Shining with Clean Energy!
Though we are still in the early stages of our Clean Energy Micro-Grid Project, I've learnt alot and enjoy working for our community to ensure that KZA-GBFN has a Clean Energy future.

Kiashke Zaaging Anishinaabek-Gull Bay First Nation

Mashkawiziiwin Clean Energy Future

Stantec Consulting Ltd. (Stantec) proposed to provide engineering services to Alltrade Industrial Contractors Inc. to support the Microgrid and Battery Energy Storage System design. Stantec community unites approximately 22,000 employees working in over 400 locations across six continents. Stantec collaborates across disciplines and industries to bring buildings, energy and resource, environmental, water and infrastructure projects to life. Stantec has an extensive pool of industry professionals with extensive experience in power generation, transmission and distribution, and energy regulatory services with commercial renewable energy project interconnect design, operations, training and maintenance requirements in Ontario and throughout North America. As a multidisciplinary firm, Stantec provides strategic planning, project design, environmental consulting, civil, structural and electrical engineering, and project and construction management services to the power industry. At KZA, Stantec will provide engineering services in the main components such as project management, environmental, geotechnical, civil, structural, electrical engineering, and field support services. Stantec's detailed engineering services including preparation of the Single Line Drawing (SLD), submittal of drawings for construction stages during execution phase, environmental review permitting support and finalizing electrical design drawings with Hydro One Remotes distribution system and integrating ABB's energy storage system and Microgrid controller will be Stantec's main responsibility.

Alltrade Industrial Contractors Inc. (Alltrade) was selected by OPG as the engineering, procurement, constructor (EPC) contractor for the Gull Bay Microgrid Project in KZA. Alltrade energy executes construction services for clients who generate power for distribution in communities. For KZA, Alltrade will offer value to every phase of the project, with commitments that are timely, cost-effective and will exceed expectations. Until completion of the project, Alltrade energy services will include, engineer design, technical specification, procurement, system drawing revision and or all drafting requirements necessary to facilitate site execution. Site preparation including; site surveying, silt fencing, site entrances & laydown areas. Civil works including; Road construction, culverts, site perimeter fencing, AC/DC trenching, & final grading and seeding. Mechanical works including; pile installation & rack and module installation. Electrical works including; AC/DC cabling, PV wiring harness, module-to-module harness, grounding jumpers, E-House/inverter and BESS wiring. Equipment including; combiner boxes, E-House/Inverter & BESS Testing & commissioning including; IV curve testing, inverter & BESS commissioning.

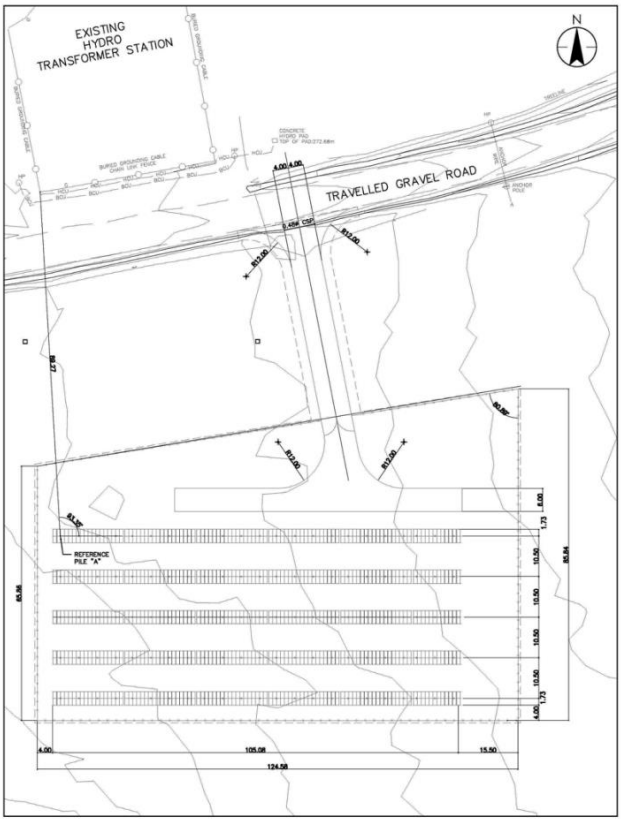
Status Update: KZA Micro Grid Project

- Total of 33 Loads of Birch Firewood from the clearing of the KZA Micro Grid Project were delivered to Community Elders and members who require wood as a heating source.
- Job Fair happened on June 20, 2018 and was well received. Miigwetch, Thanks to everyone who attended.
- OPG and ABB met with Hydro One Remotes at the KZA Remotes Diesel Generating Station to look at interconnection requirements.
- Helical Pile testing complete; New Site Layout (opposite page)
- Construction of KZA Micro Grid Project Site fence and grading (gravel) to start in late August.
    - Construction of Solar Panels and Racking to start in September.

Status Update: KZA Community Energy Plan

- Energy Audits on Community Buildings coming Fall 2018.
- Steenhof Building Services Group have been selected as the company to do Community Energy Building and Residential Audits.

Temporary Detour Route – in effect during construction of KZA Solar Micro Grid Project



The construction Island.

Kiashke Zaaging Anishinaabek - Gull Bay First Nation
Mashkawiziiwin Clean Energy

The Construction Phase

Clearing, Grubbing and bucking and delivering the wood.
Date: May 16/17 2018




Filming with Westfort Productions Date: May 16 2018
Silt Fencing Date: Wednesday May 23 2018
Culverts: Date: Tuesday June 26 2018



Surveying Pictures

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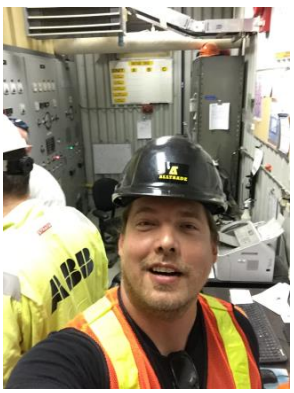
Helical Pile Testing Date: June 26 2018

The Hydro Plant – KZA, ABB & O.P.G visit with Hydro One to look at Interconnection.
Date: Tuesday June 26 2018



Job Fair Date: June 20 2018

Mashkawiziiwin Clean Energy Activity Section

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aboriginal power
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clean energy
electricity
hydro plant
Kiashke Zaaging
Lumos
Mashkawiziiwin
photovoltaic
solar power
sun rays
wind power

Word Jumble

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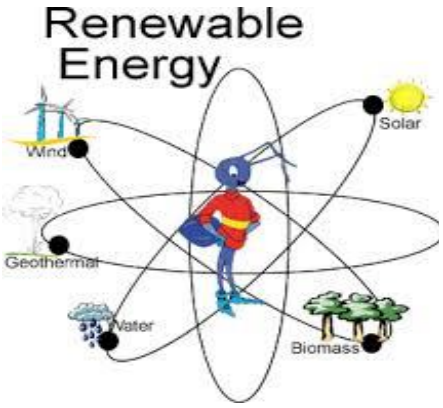
Wild ginger; dandelion; red berried elder;
low bush cranberry; bunchberry;
blueberry; northern starflower; raspberry;
strawberry

Mashkawiziiwin Clean Energy Activity Section

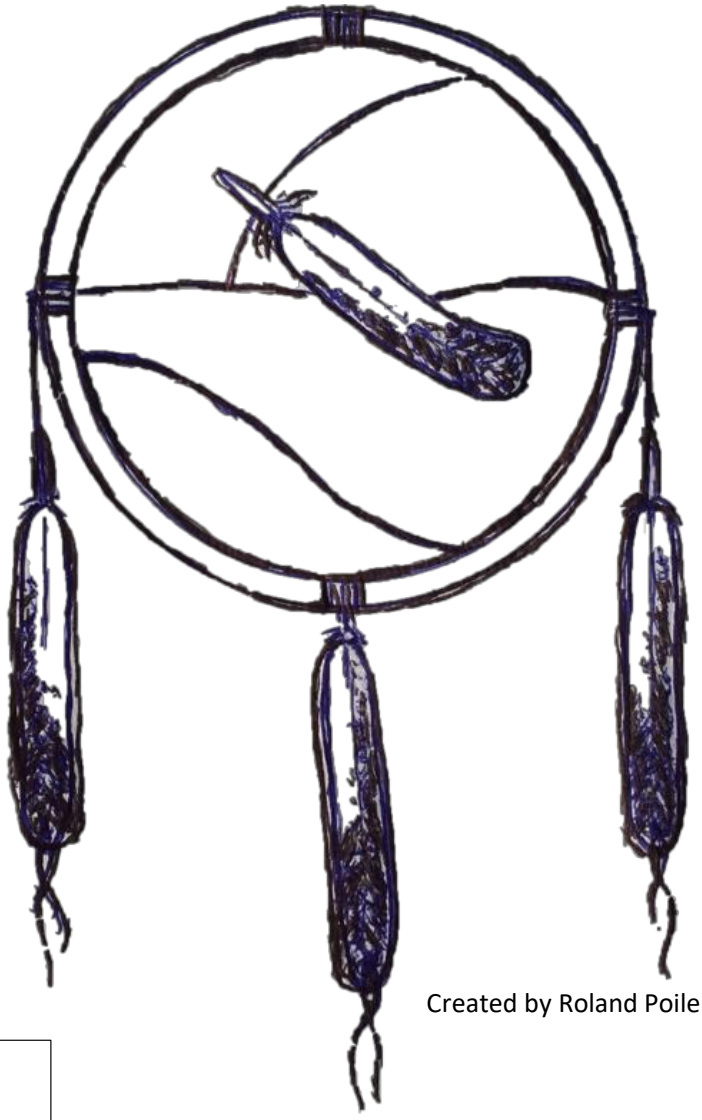


Q: How do energy – conscious people feel about wind power?

Q: How did Benjamin Franklin feel when he discovered electricity?

Q: Why did the foolish gardener plant a light bulb?

Color the Logo



Created by Roland Poile

Answers: They're blown away!
He was shocked!,
He wanted to grow a power plant!

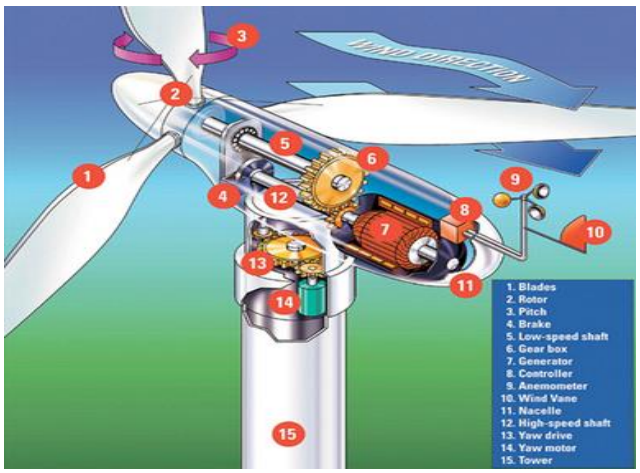
Wind Power

Wind energy systems use wind turbines to convert wind energy to electricity. Wind turbines range in size from a few hundred watts to 3-5 Megawatts. With proper maintenance, wind turbines can be expected to last 20+. Wind turbines are very reliable: tens of thousands of installations worldwide, on and off-shore.

The intermittency of wind affects electricity generating potential. Wind speed and direction varies across seasons, and over the course of a single day. Therefore, turbine may be operating at full capacity when the wind is blowing strong, and at other times it may only operate at less than half, or less, of total capacity. When the wind speed is too low or too high, the wind turbine will not generate any power. Capacity factors in the range of 30% are considered to be good for a wind farm, above 35% is excellent.

The components of a wind energy system include: a) The ***Base*** of concrete anchored in the ground (preferably on rock); b) The ***Tower*** which can range from 40-120 meters in height; c) The ***Blades*** which capture wind; and d) the ***Generating System*** including a ***Shaft***, ***Gear Box***, and ***Generator***.

Wind Turbine Components



Communities can measure the potential wind power capacity by installing an anemometer, a device on a meteorological tower which tracks wind speeds and direction. An anemometer needs to be installed for a period of time to generate valid wind measurement results.

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

LUMOS CLEAN ENERGY ADVISORS

Mashkawiziiwin Clean Energy Future

Household TIPS … immediately Save Energy 3 Easy Ways

1. REDUCE ENERGY USE

Get annual heating system tune-ups. When your burner is running at peak efficiency your fuel consumption is minimized. That not only saves up to 10% on annual fuel bills, it also increases the lifespan of your furnace.
Spring Tune Ups Give You More. Did you know that you have an advantage if you get your furnace tuned up in the spring rather than in the fall? When a furnace sits idle all summer long combustion residue that settles in the heat exchanger absorbs humidity from the basement and becomes nearly impossible to remove in its entirety. Have your furnace tuned up in the spring, before it goes on hiatus for the summer months. Any residue will still be dry, not affected by humidity and easily and effectively vacuumed from the heat exchanger, helping you achieve maximum efficiency for your furnace.
Change or clean your furnace filter regularly. This improves the flow of air and prevents your system from working harder than it needs to, which wastes energy.
Install a programmable thermostat. Then adjust temperature settings to energy-saving levels when you're sleeping or away from home. You'll lower your heating and cooling costs by 15% per year.
Enjoy comfort and savings with ceiling fans. They use far less energy than air conditioners and still allow you to feel cool while keeping your thermostat set a little higher. For each degree you are able to raise the thermostat, you will save 3–5% on air conditioning costs.
Turn off or replace inefficient appliances and light bulbs. Old appliances, incandescent light bulbs, and electronics not only draw a lot of energy, but also give off excess heat. Install compact fluorescent bulbs throughout your house -- they last longer and use 75% less energy.
Buy Energy Star® appliances. Choose Energy Star rated equipment for every application in your home – heating and cooling systems, kitchen and laundry appliances, TV's, computers and all other electronics. You'll easily measure the home energy savings in hundreds of dollars over time.
Move furniture away from vents. Let the warm or cool air circulate freely so your system works more easily and minimizes fuel and energy consumption.
Seal your duct system with tape. Leaky ducts can waste enormous amounts of heat and air conditioning. Anywhere you can reach it, seal the ducting and save. Specialized shiny silver "compression tape" is longer lasting that the dull grey tape. Ask for it at your building supplies store.
Have your duct system vacuumed regularly. Professional duct cleaning every few years, or after a renovation, removes built-up dust and debris that inhibits air flow and makes your system work unnecessarily hard. Air quality also is much improved.
Be Kitchen Energy Smart. And Laundry Energy Smart too! Don't preheat the oven unnecessarily and use the microwave or toaster oven for cooking small items. Don't leave the fridge door open or the oven door open -- every time you do, up to 25% of the air inside can escape. You paid to heat or cool that air! Run only full loads in your dish washer and laundry machines, and avoid the warmest periods of the day so your a/c system doesn't have to work harder. Also consider air-drying laundry. These simple measures can result in a 30% energy savings in these high energy-consumption rooms.
The dry towel energy saver. Put a dry towel in the dryer with each load of wet clothes. The towel will absorb dampness and reduce drying time up to 33%.

2. KEEP THE WARM & COOL AIR INSIDE YOUR HOME

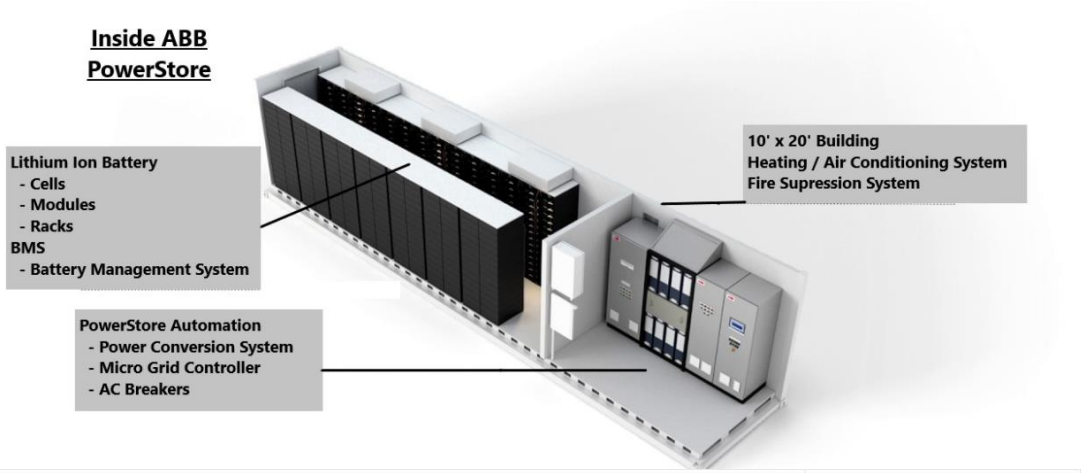
Get Caulking. Each Spring and Fall, inspect the interior and exterior seals around windows, doors, skylights, and all plumbing and wiring penetrations through insulated walls and ceilings. Or hire a reputable company to do it for you. If left unsealed, the collective effect can be like leaving a window open year round.
Buy Energy Star® windows, doors and skylights. New windows and doors are hugely effective in reducing warm and cool air loss. Plus they improve home comfort and add to your property's value. Windows manufactured with a low-emissivity coating (low-E) control heat transfer through the glass without loss of visibility, and reduce energy loss by as much as 30–50%.
Control the heat gain from outside your home. During summer, use window shades to minimize heat gain during the day and open your windows at night to enhance airflow. In winter, let the sun's warmth enter your home.
Use kitchen, bath and other ventilating fans wisely. In just one hour, these fans can push out a houseful of warmed or cooled air. Turn bath and stove-top fans off as soon as they have done the job.

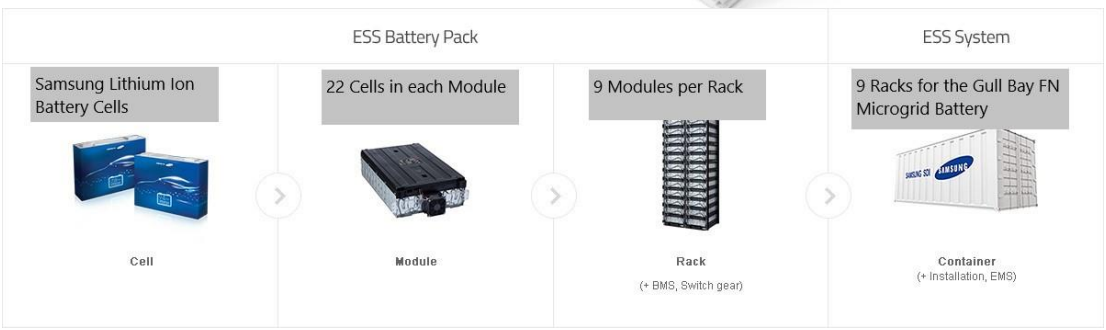
3. REDUCE WATER CONSUMPTION

Reduce water use and the energy needed to heat it. Wait until the dish washer and clothes washer are full and use more cold water for washing and rinsing. Also consider air drying the dishes.
Install water-conserving fixtures. Water-restricting showerheads, faucets and toilets are effective choices for conserving water.
Don't delay, fix those leaky faucets. Especially hot water faucets. One drop per second adds up to 165 gallons per month — more than a person uses in two weeks.

Mashkawiziiwin Clean Energy Future

ABB has been in business for over 130 years and operates in more than 100 countries with about 147,000 employees. ABB's products and services range over hundreds of different industries, one of which is power generation and micro grids. ABB has expertise in designing and building off-grid and grid-connected Microgrids using their ABB Ability™ PowerStore™ that includes the ABB Ability Microgrid Plus control and automation and software solutions for remote services, energy management systems and optimization. ABB has installed more then 310MW their micro grid and energy storage technology in projects globally, from Australia to Alaska and now coming to KZA. For KZA, ABB utilizes two major components to power the community and reduce the reliance of diesel fuel. The Microgrid Master Controller (MGMC) controls and monitors electricity the community uses during operation, it displays how much solar power produced and electricity stored in the battery and electricity the diesel generators. The purpose of the MGMC is to ensure the supply of electricity to the community is maximized through solar energy and a battery energy storage system (BESS) to reduce the amount of diesel fuel used by Hydro One Remotes diesel generation station. The BESS is used to ensure there is a balance between the amount of energy the community requires and the amount of solar power produced. The surplus of solar energy will be used to charge the battery, when there is not enough solar power to meet community demand. ABB's Ability PowerStore (BESS) will ensure that batteries are charged and discharged according to community needs and temperature inside the BESS during operation will be controlled by a built-in HVAC system.





NEW

CanadianSolar

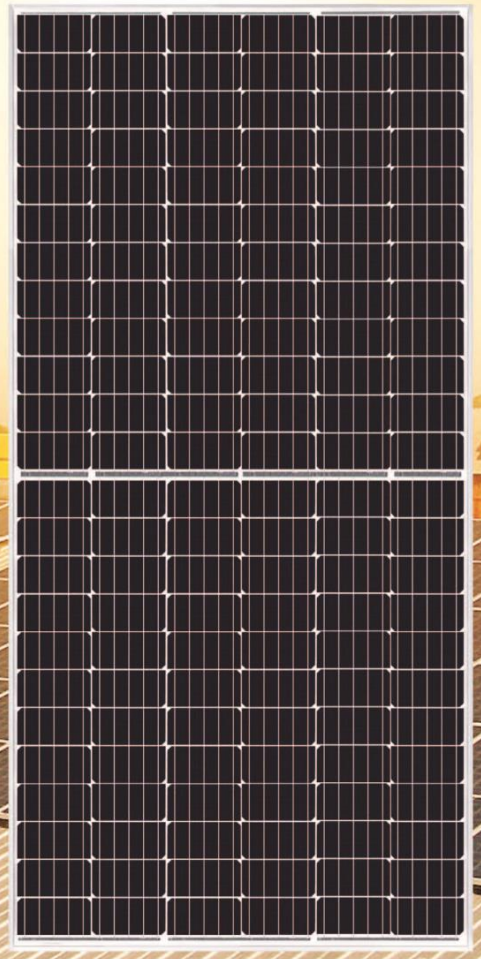
KuMax (1000 V / 1500 V)

HIGH EFFICIENCY MONO MODULE CS3U-365|370|375|380MS

With Canadian Solar's industry leading mono-PERC cell technology and the innovative LIC (Low Internal Current) module technology, we are now able to offer our global customers high power mono modules up to 380 W.

The KuMax mono-PERC modules with a dimension of 2000 × 992 mm, close to our 72 cell MaxPower modules, have the following unique features:

- **Higher** power classes for equivalent module sizes
- **High** module efficiency up to 19.15 %
- **LOW** hot spot temperature risk
- **LOW** temperature coefficient (Pmax): -0.37 % / °C
- **LOW** NMOT (Nominal Module Operating Temperature): 42 ± 2 °C



More power output thanks to low NMOT: 42 ± 2 °C

Low power loss in cell connection

Safer: lower hot spot temperature

Heavy snow load up to 5400 Pa, wind load up to 2400 Pa

1500 V

Low BoS cost with 1500 V_{DC} system voltage

25 years **linear power output warranty**

10 years **product warranty on materials and workmanship**

PRODUCT CERTIFICATES*

IEC 61215 / IEC 61730: 2005 & 2016: VDE / CE / UL 1703: CSA

* Please contact your local Canadian Solar sales representative for the specific product certificates applicable in your market.

Kiashke Zaaging Anishinaabek
Community

Gull Bay Police Service:
Concerns: The Gull Bay Police Service have observed over a time period where our community members are not properly using the child safety seats or not having proper seatbelts secured for their children when driving in the vehicles in the community of Gull Bay.
The safety of our children completely begins with the parents. We learn from our parents on how to be safe in all walks of our life. Accidents can happen in an instant. (YES in Gull Bay)
The Gull Bay Police Service express great concern with this safety issue. The goal of the Gull Bay Police Service is to educated the community members on the safety of this issue. By means of patrolling the community and stopping community members to insure the children are properly secured in their child seats or have proper seatbelts secured. Also The will be a mandatory education program on child safety, with car seats and seatbelts in the near future.

You're Community Volunteer Fire Department

The Kiashke Zaaging Anishinaabek – Gull Bay First Nation Fire Department serves approximately 100 residents from the centrally located Fire Hall. The Volunteer Fire Department has 1 Fire Truck and 5 very dedicated volunteer firefighters who serve the community 24 hours a day, 7 days a week and 365 days a year!

Recruitment: please contact Kenny King (Fire Chief) at 807-982-0006 for further information on becoming a volunteer firefighter with the Kiashke Zaaging Anishinaabek – Gull Bay First Nation Volunteer Fire Department.

Logo: We are currently looking for an individual to assist us in creating a logo! Unfortunately, we are not considering this a contest, so there will be no honoraria, but a grateful thank you from your volunteer fire department!

Kiashke Zaaging Anishinaabek "MNR" Fire Crew





Gull Bay First Nation
Information

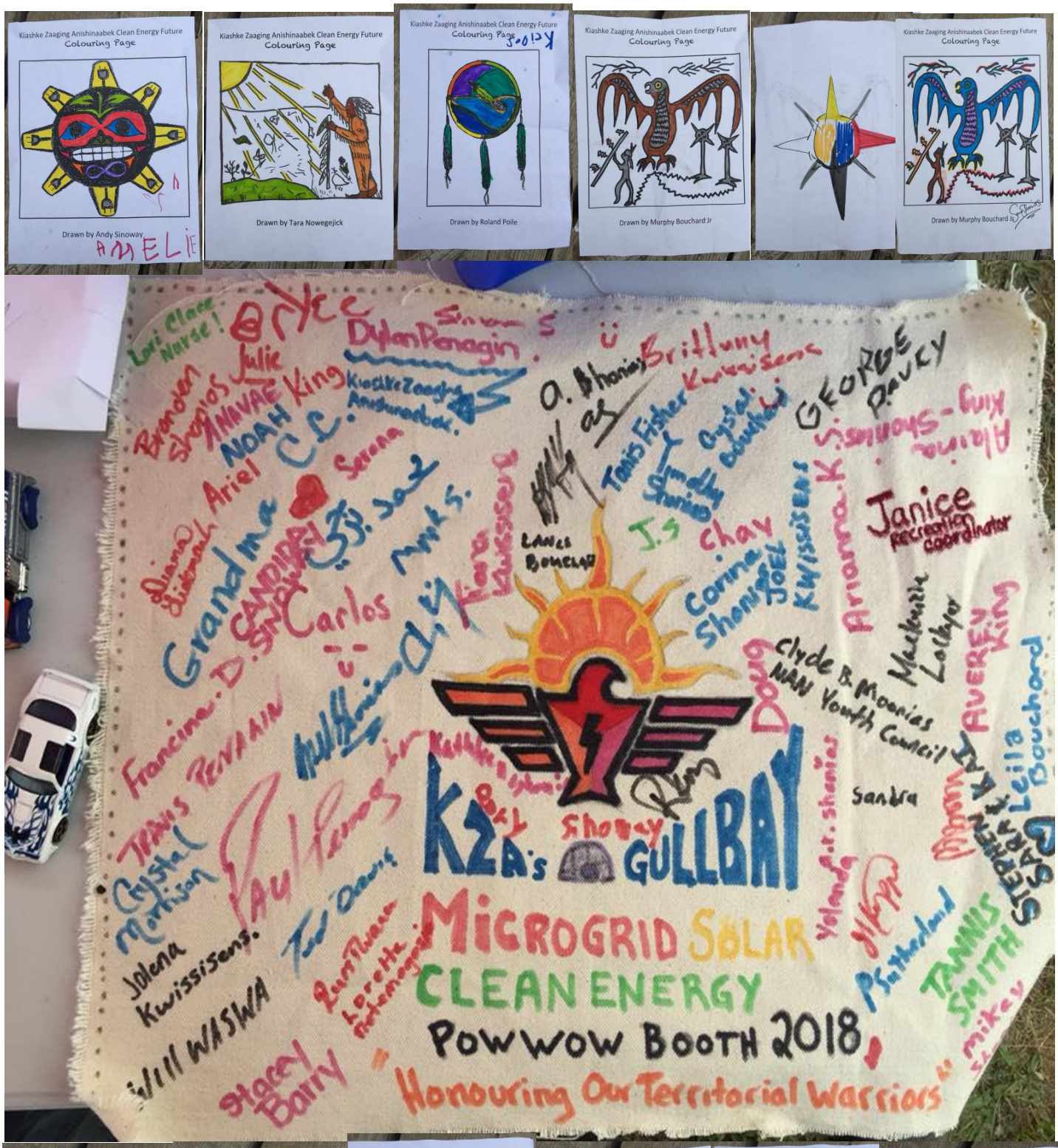
MINO-NIIGAANENDMOWIN
EDUCATION | LIFE SKILLS

MINO-NIGAANENDMOWIN
Would like to encourage anyone who would like to complete their Ontario Secondary School Diploma, to come and sign up at the recreation center. Mon. – Fri. 8:30am – 4:30pm.
For any other information about the program please feel free to stop by the recreation center or phone 982-0025.
KZA Facilitator Chris King Jr.

Kiashke Zaaging Anishinaabek-Gull Bay First Nation
Community Garden

For the first time in many years KZA-GBFN finally has a community garden. This was made possible by the generous donations from KZA-GBFN Chief and Council, Roots to Harvest, Milne Aggregate and Outland. On July 4th, in the rain, community volunteers and Roots to Harvest spread the manure, dug the raised beds and planted/transferred the delicious goodness we will soon get to taste. In the garden there is; potatoes, beans, onions, beets, carrots, tomatoes, peppers, zucchini and cucumbers.
Volunteers are watering, weeding and taking care of the garden so that the whole community can reap the yummy rewards come harvest time.
If community members would like to volunteer their time, please contact Crystal Nowgejick at the Government Office. If a member is in receipt of Ontario Works, their hours can be used towards their Participation Agreement requirements.
Chi Miigwetch to all those who made it possible for all of us.




Kiashke Zaaging Anishinaabek Clean Energy Future
Colouring Page
Drawn by Andy Sinoway
Drawn by Tara Nowegejick
Drawn by Roland Poile
Drawn by Murphy Bouchard Jr
Drawn by Murphy Bouchard Jr
K2A's
GULLBAY
MICROGRID SOLAR
CLEAN ENERGY
POWWOW BOOTH 2018
Honouring Our Territorial Warriors