

# BIOHEAT IN REMOTE FIRST NATIONS

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WEDNESDAY MAY 8<sup>TH</sup>, 2023

**National Summit on the Indigenous Forest  
Bioeconomy**  
Saskatoon, Saskatchewan

I would like to acknowledge the lands where we are:

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Today I speak from Treaty 6 Lands in Saskatchewan

But also, the lands of the Nations where you live, play and work.

We thank Mother Earth for her gifts

And we think our people and the challenges they may face



# CARA SANDERS

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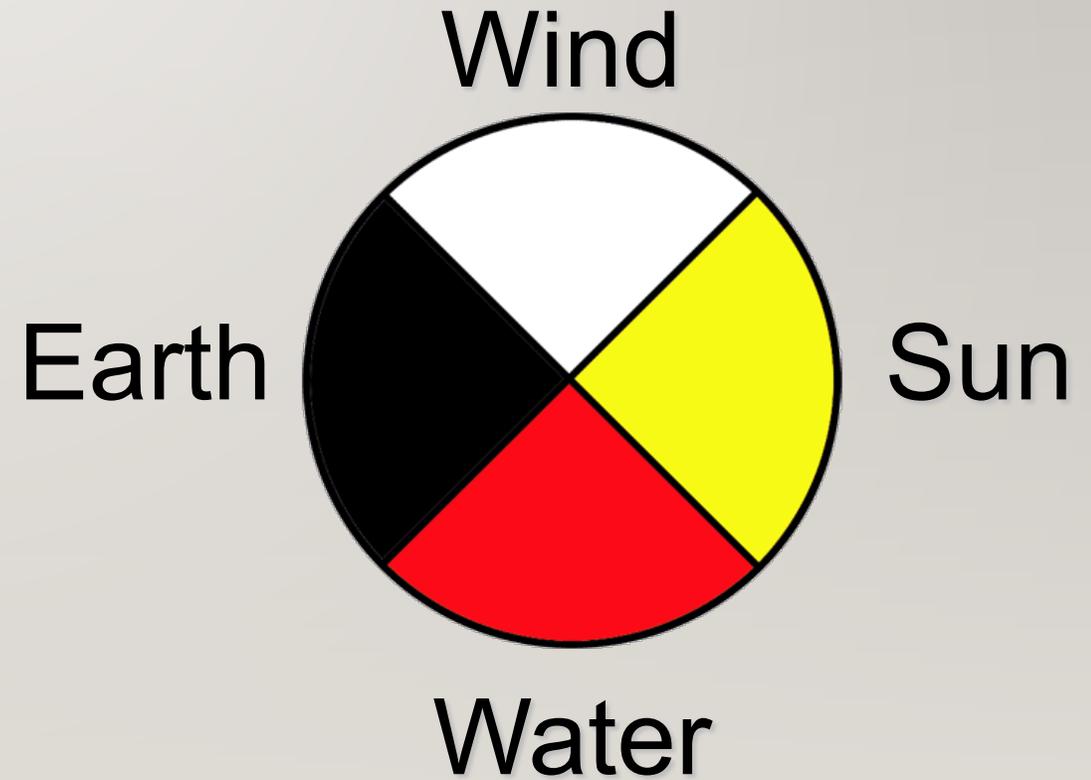
- I am an independent, First Nation, small business owner. I have focused my work on rural and remote First Nations in Ontario because I believe they could use the most help and also need the most advancements.
- I am a member of Curve Lake First Nation.
- Let us work together and do the best we can to protect our Mother Earth and all of us who walk upon her.
- My passion is renewable energy and housing, these are areas we can work on and improve life for our people.



# RENEWABLE ENERGY

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- As a First Nation Woman I believe in Using the Gifts from our Mother Earth.
- I do believe we all can do better in what we do and how we use the gifts we are given.
- All of us here today are looking and learning about the solid gifts that sprout from the earth and how these gift can be used, protected and regenerated in a good way



# FIRST STEPS

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- I think for me the big thing is do not be afraid
- Learn to ask questions, every question brings you closer to what you want and need
- Talk to the funders, they are there to help and they want to help
- Do not be afraid to make mistakes and learn from what you do
- Make sure you have the support that you need
- HAVE FUN

# LEARNING

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- In these 10 + years I have learned so much
  - Education is power, that is a fact
- But there are so many types of education, you need to be open to all things
  - Not all education comes from books
- Open your eyes and see what is there

# SOCIO-ECONOMIC MODEL

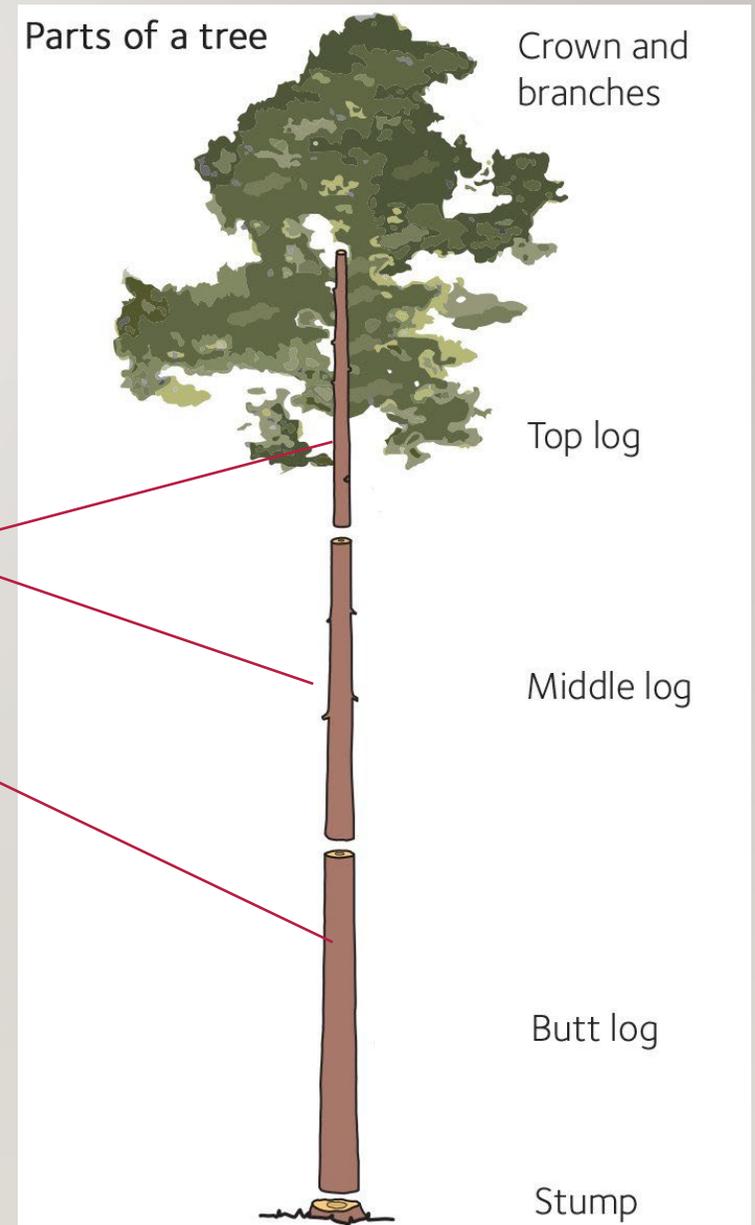
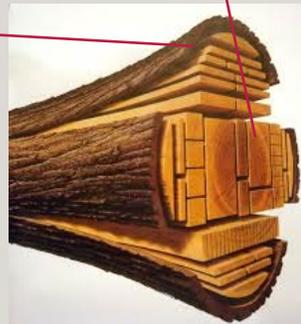
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- The program created for Indigenous Youth is about:
  - Renewable Energy
    - Biomass
    - Solar
  - Capacity Development
    - Harvesting
    - Construction
    - Small Business
  - Social Enterprise
  - Economic Development

This approach is also virtually wasteless, each aspect of the tree is used

The program has four product streams:

- Cut and split Firewood sales
- Lumber sales and
- Value Added - dog houses, picnic benches, sheds etc.
- Residual slabs are for the wood chip fuel to heat the school (and future heating projects)



# BIOMASS SUPPLY

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When planning a bioheat project, or planning to plan a project, there are things that need to be CLEARLY DEFINED as a first step:

1. What fuel is available? Can you access it? What hurdles are there in this process? Is there a forestry plan? Do you need a forestry plan?
2. Do you have the capacity and equipment needed to harvest?
3. How are you going to get it from there to where you need it?

Northern Ontario has an abundant supply of forest resources but access to the supply can be very challenging. There are no roads, path can be very wet and unfriendly and the bugs can carry you away. In the winter, the -40°C temperatures are really no fun



# FAIL TO PLAN - PLAN TO FAIL

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- This is a great motto but
  - This is not true when working in an off-grid (remote) situation
- I think the biggest thing I learned from this journey is there is room for a firm plan.....BUT
  - As an advisor/team you need to be super flexible and patient.
  - You need to accept that things do not always go as you hoped.
  - Be open and honest, transparent.
  - Ask questions and learn from other.
- Something I do not say to others is
  - “It is easy just do this .....
  - You need to be more “How can I help?” “Okay, so this did work, let’s try.....?”

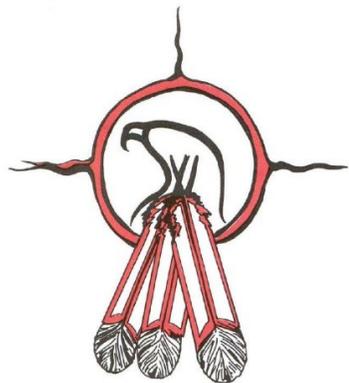
# NEEDS ANALYSIS – SUPPLY 300 KW (2 \* 150KW BOILERS)

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- It was estimated each system needed approximately 300 cubic metres of fuel to chip to operate per year
- Okay, so we need “300++ trees”.
- The estimated savings is \$100,000 – this will be diverted towards labour.
- There are options:
  - Hire people and pay a value per-tree, and have a boiler crew
  - Hire part-time team all year and the 2 do it all
  - Train Youth



# CLEAN ENERGY IN NORTHERN ONTARIO IN REMOTE FIRST NATION RESERVES



- I work with Pikangikum First Nation and Kitchenuhmaykoosib Inninuwug.
- Installed a 300 kW system in each Nation
  - We are also installing 100 kW of solar PV in each Nation
- Pikangikum is 100+ km from nearest town. It is accessible by plane or boat or ice road in winter
- Kitchenuhmaykoosib is 300+ km from nearest town. It is only accessible by plane or ice road in winter

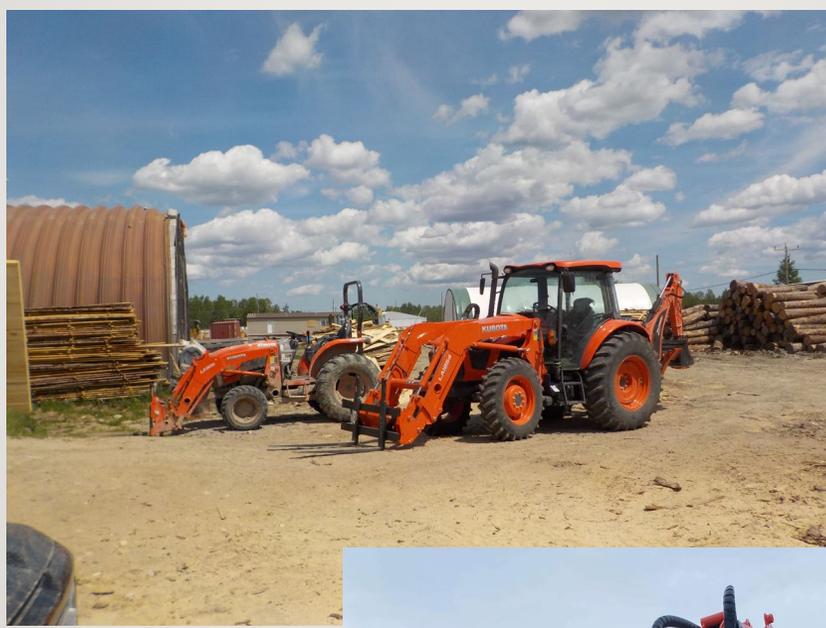


# PIKANGIKUM YOUTH SAWMILL PROGRAM

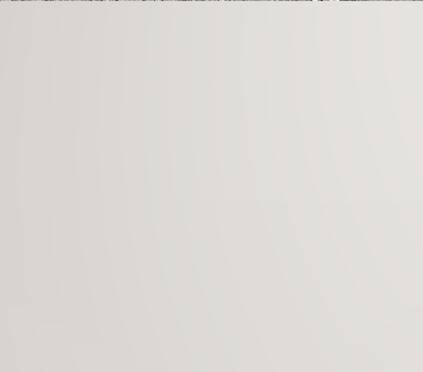


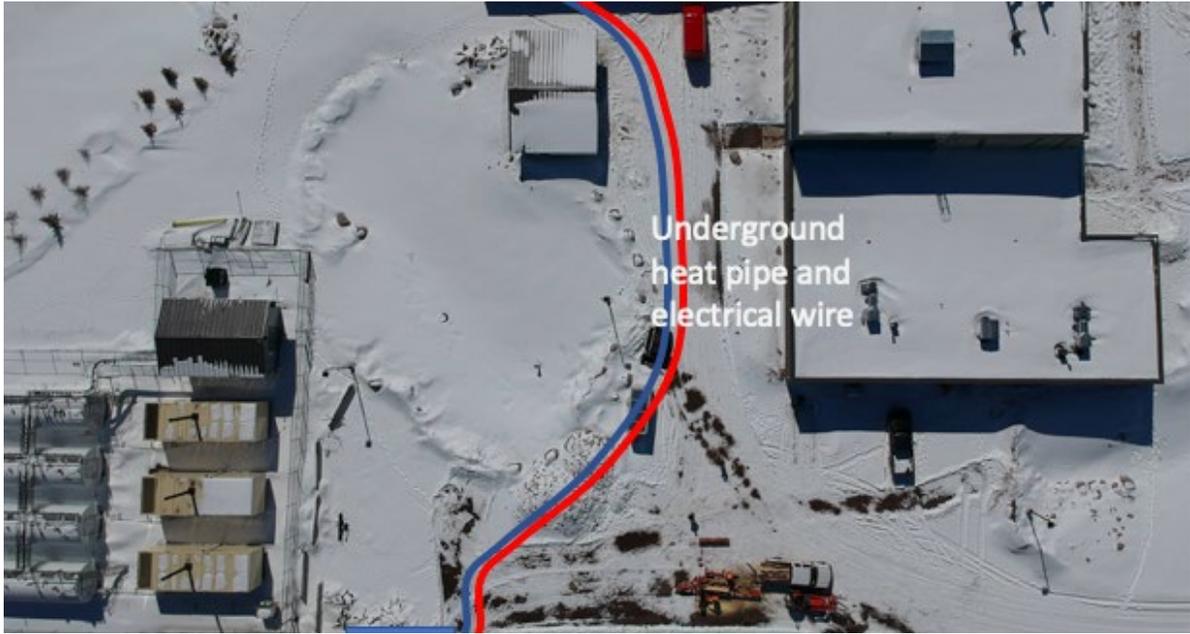
- Established August 2018
- Pikangikum First Nation has ~4000 members,
  - 50% Youth,
  - unemployment +90%
- There are currently 6 Full time workers and we co-op high school students for the summer

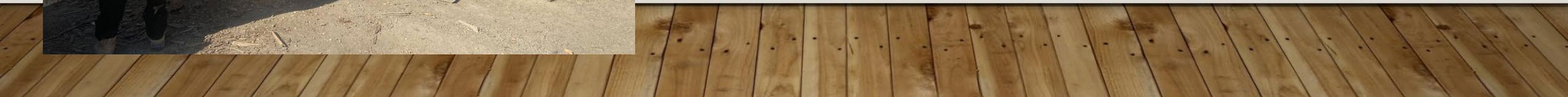








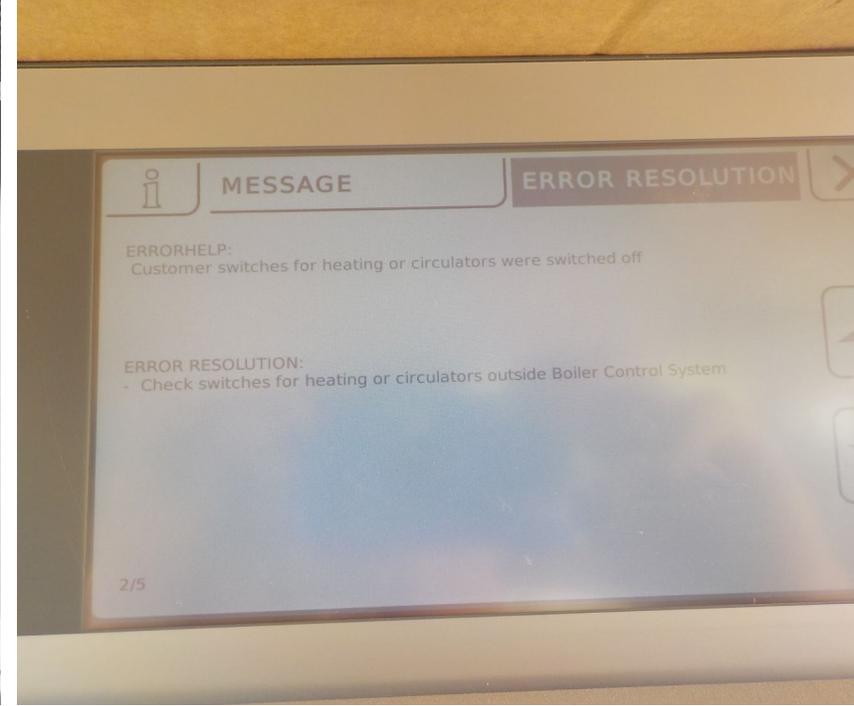


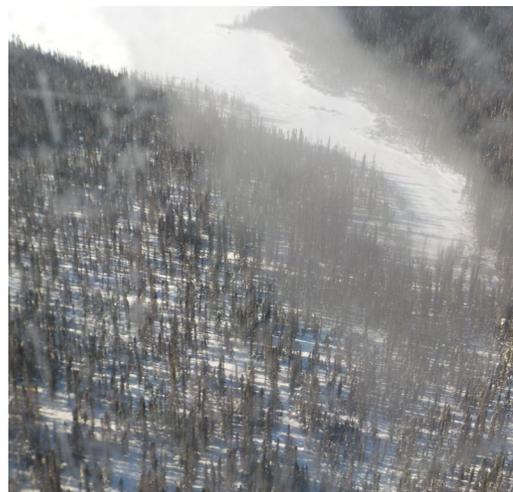




		Mar 9 23	Apr 26 23
36,500	kWh created	217,052	258,137
BTU/litre diesel	BTU	740,615,578	880,800,005
	Litres saved	20,291	24,132
\$3	days	63	110
cost per litre	savings @ \$3/l	\$60,872.51	\$72,394.52
	per day	\$966.23	\$658.13







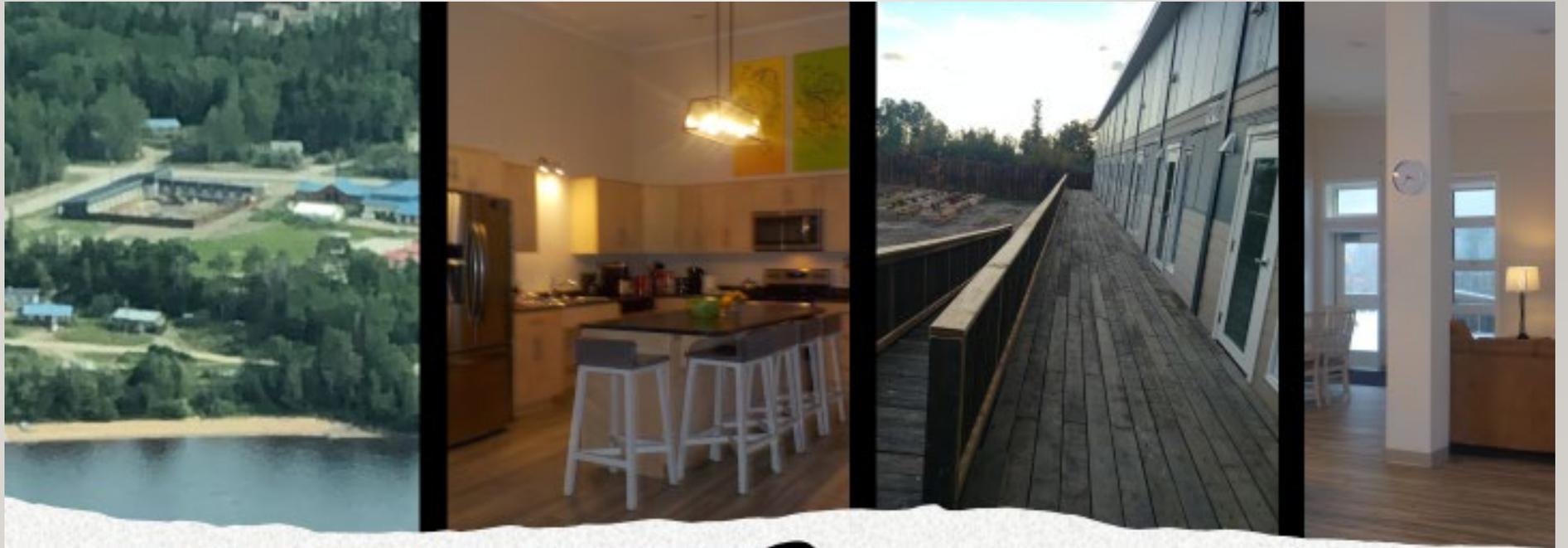




# BIOMASS SUPPLY

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- We are currently
  - Purchasing oversize, it is delivered on the ice road
  - Harvesting smaller trees as part of the capacity development
- We have completed some training but more is needed to access the supply that is needed



## Housing

- The Positive Side

# MY APPROACH TO PROJECT PLANNING

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When planning a bioheat project, or planning to plan a project, there are things that need to be CLEARLY DEFINED as a first step:

1. What fuel is available? Can you access it? What hurdles are there in this process? Is there a forestry plan? Do you need a forestry plan?
  - This is the biggest challenge of this project.
2. How are you going to get it from there to where you need it?
  - This is definitely a challenge.



# ALWAYS INCLUDE ENVIRONMENT & CLEAN ENERGY

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## MAKE EVERY OUTING A LEARNING OPPORTUNITY:

- Protection of Lands & Waters
- Traditional Knowledge
- Plants & Medicines
- Fishery
- Wildlife
- Elders Guidance
- Clean Energy: Clean & Green
- Target Clear Reductions in GHG Emissions
- Forge New Partnerships

Thank You

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