



**CONSERVATION  
CONVERSATION**

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**First Nations  
Environment Conference**

September 29 2015

Thunder Bay

# Introduction

- Who is John Jeza?
- Conclusion – There is NO Silver Bullet
- Housing is a business
- The need for the **Conservation Conversation**
- My Hydro Bill
- What impacts hydro bills
- Little Known and Known Facts
- Starting the **Conservation Conversation**
- Community Energy **Action** Plans

# Who Is John Jeza

- Born and raised in Thunder Bay
- Been in the **Conservation** business for several decades
- Worked with many of the leaders in the conservation industry in Ontario
  - technical and field
- Worked for:
  - Ontario Hydro
  - Sudbury Hydro
  - Ontario Power Authority
  - Consultant
- Been involved in customer service, billing, collections, meter reading, telecommunications, water heating.....

# Great Mentors



# Conclusion - NO Silver Bullet

## Many Issues – Multiple Actions

- Combination of many issues
- Community members are very capable of defining the issues
- Need to discuss the issues
- Combination of straight forward and technical solutions
- Expertise to assist in developing solutions



# The Need for the **Conservation Conversation**

High hydro bills are an indicator of:

- Quality of the housing
- Individual vs. Band responsibilities
- Funding available to build and maintain safe, healthy and efficient home
- Capacity within the community to build/maintain homes
- Competing interests due to funding restrictions
- Others.....

# Housing as a Business

- Consider looking housing as an 'asset'
  - Similar as land and people can be viewed as part of the First Nation's 'assets'
- What's it worth:
  - Average cost to build a home: \$150,000
  - 100 homes:  $\$150,000 \times 100 = \mathbf{\$15,000,000}$
- In addition to the cost of the physical asset (the building) what is the impact of housing on a community?

# Housing and Community Well-Being





# Is Housing “Working”

Is housing “working” in your community?

- Are the houses maintained?
- Are there standards/rules for renovating homes?
- What type of new homes are being built?
- What’s the plan for future housing?

ALL OF THESE FACTORS IMPACT ENERGY USE

- If housing isn’t working – do you keep doing what you have been doing?

# The Need for the **Conservation Conversation**

Have an ongoing discussion on:

- How I use electricity?
- What impacts my use of electricity?
- What are the issues related to electricity use?
- What can I do?
- How can **WE** address the issues?

# Before We Start The Conservation Conversation



- It's **NOT** the meter

It can be:

- \* Estimated reading
- \* Adjusted bill
- \* Late payment charges
- \* Reconnection fees
- \* Non-payment

Hydro One only wants to charge you for the energy you use

Call Them!!

# Electricity Rates Are The Same (or less)



Electricity Rates for Service Classifications:	
Year Round Residential – (Residence)	
Service Charge (\$ per month)	\$18.70
<b>Energy Charge Cents/kWh</b>	
First 1000	8.80
Next 1500	11.73
Over 2500	17.69

1000 kWh per month **\$106.70**

SAMPLE MONTHLY BILL STATEMENT Kenora Hydro Electric Corporation Ltd. - Main	
Account Number:	000 000 000 000 0000
Meter Number:	00000000
<b>Your Electricity Charges</b>	
<b>Electricity</b> (what is this charge?)	
Off-Peak @ 8.00 ¢/kWh	51.20
Mid-Peak @ 12.200 ¢/kWh	21.96
On-Peak @ 16.100 ¢/kWh	28.98
<b>Delivery</b> (what is this charge?)	
	48.30
<b>Regulatory Charges</b> (what is this charge?)	
	6.20
<b>Debt Retirement Charge</b> (what is this charge?)	
	7.00
<b>Total Electricity Charges</b>	<b>\$163.64</b>

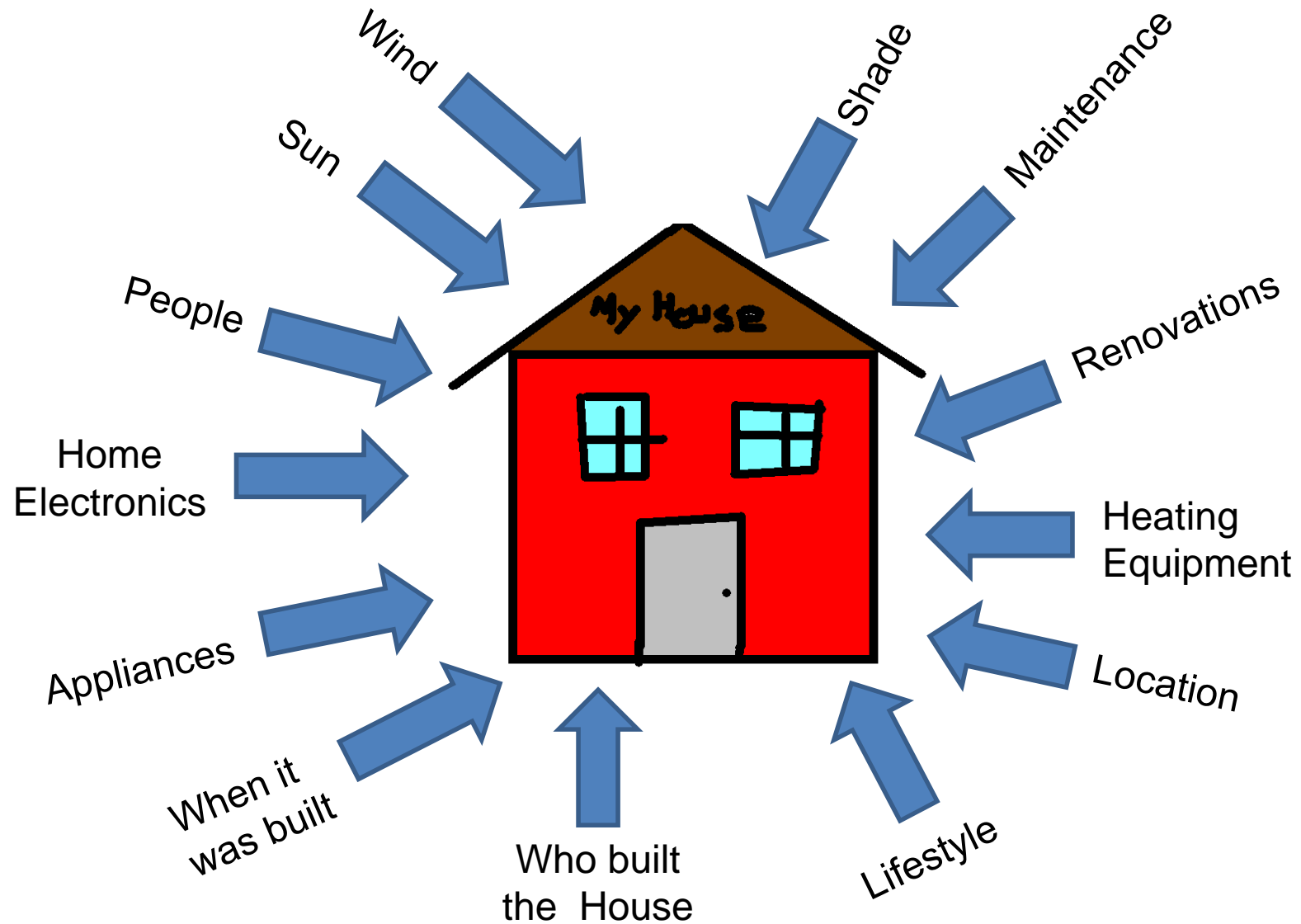
# My Friends Bill.....

Somewhere where they heat with gas.....

- Yes, gas is less expensive to heat with....however
- Did you know when you have gas:
  - Monthly connection fee
  - Gas water heaters cost more to buy or rent than electric water heaters
  - Gas water heaters do not last as long as electric water heaters
  - Gas furnaces and appliances should be maintained by a qualified contractor – every one/two years
  - Gas furnaces cost more to install than electric baseboards or furnace

**It is NOT the same as your house**

# NO Two Houses Are The Same



# How I Use Electricity

People don't directly use electricity

- They use:
    - Products
    - Appliances
    - Tools
- that use electricity



# Which Uses More Electricity?

- Running a hair dryer for 20 min



1500W

- Running a 3ft baseboard heater for an hour



500W

**They use about the same!**



# Little Known Fact

Energuide vs

EnergyStar

Annual energy consumption of the model in kWh

Energy consumption indicator, which positions the model compared with the most efficient and least efficient models in the same class

Canada  
**ENERGUIDE**  
Energy consumption / Consommation énergétique  
**300 kWh** per year / par année  
This model / Ce modèle  
189 kWh 1032 kWh  
Uses least energy / Consomme le moins d'énergie  
Uses most energy / Consomme le plus d'énergie  
Standard / Ordinaire  
Similar models compared / Modèles similaires comparés  
Model number 0 0 0 0 0 0 0 Numéro du modèle  
Removal of this label before first retail purchase is an offence (S.C. 1992, c. 38).  
Enlever cette étiquette avant le premier achat au détail constitue une infraction (L.C. 1992, ch. 38).

**L/100 km  
mpg**

**ENERGY STAR**  
**HIGH EFFICIENCY**  
**HAUTE EFFICACITÉ**

**Best in category**



# Little Known Fact

Unplug your old second fridge and save over \$100 a year on your power bill.



Annual costs to run a fridge, based on the average annual electricity cost. Chart is based on the average annual electricity cost for a 16 cubic feet or larger. Cost of electricity



# Little Known Fact

## Game System Energy Comparison

Game System	In Use	Idle	Standby
Wii	20W	15W	2W
Xbox 360	189W	155W	3W
Playstation 3	193W	177W	1.9W

- **170+ kWhs/yr** (~ $\frac{1}{2}$  hr/day)
- Scientific American Dec 17 2012
- $170 \times 11.93 = \$20.28$



# Little Known Fact



Running a dryer for one hour is the same as running **eight** 500W baseboards for an hour

# Little Known Fact

## Give Yourself a Christmas Present!

Cost to power 100 feet of lights for one month



**\$0.23**

LED Lights



**\$3.29**

Mini Lights



**\$8.22**

Small  
Incandescent Bulbs



**\$11.51**

Standard  
Incandescent Bulbs

Based on 31 days of operation at five hours a day; cost of electricity of 10.61 cents per kilowatt hour.

# Little Known Fact

Plastic goes on the **INSIDE** of windows





# Little Known Fact



*Yikes! Look at this heating bill!*

- Air leakage represents 25 to 40 percent of the heat lost from an older home. This costs you hundreds of dollars per year whether you heat with natural gas, oil or electricity. Eliminating air-leakage problems with a professional air-sealing job is usually the single most cost-effective repair you can make to an older home.

<http://www.nrcan.gc.ca/sites/oe.nrcan.gc.ca/files/pdf/residential/personal/documents/air-leakage-eng.pdf>

# You Probably Know

Turn heat tape off in the summer!



Turn **off** crawl space heaters

1500W x 24 hrs = 36 kWh

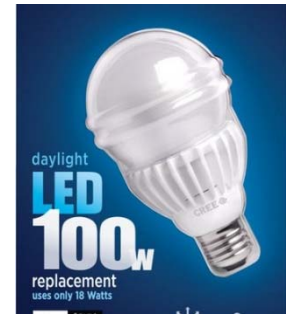
\$3.60/ day

\$108/month

You never 'see' this heater!



# You Probably Know



Lots of lights in a house and a community

More people in a house – more often lights are on



# Little Known Fact

## Hot Water Use Per Day

- 75 litres of hot water/day
- 6 people in a home
- 450 litres/day or 98 g/day
- \$2.50/day
- \$75/month
- \$900/yr



- Leaky tap
- <1g to 5 g per day
- 220g to 2220g per yr
- \$5.50 to \$55/yr

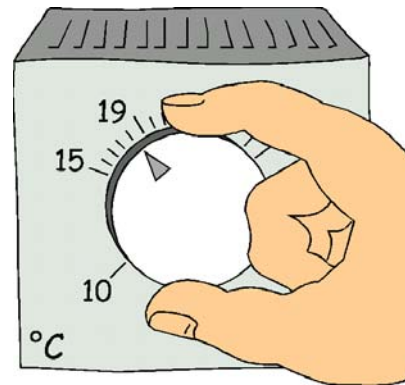
# You Probably Know

- Too warm in the house
- **Don't** open that window – turn down the heat
- Where's the thermostat??

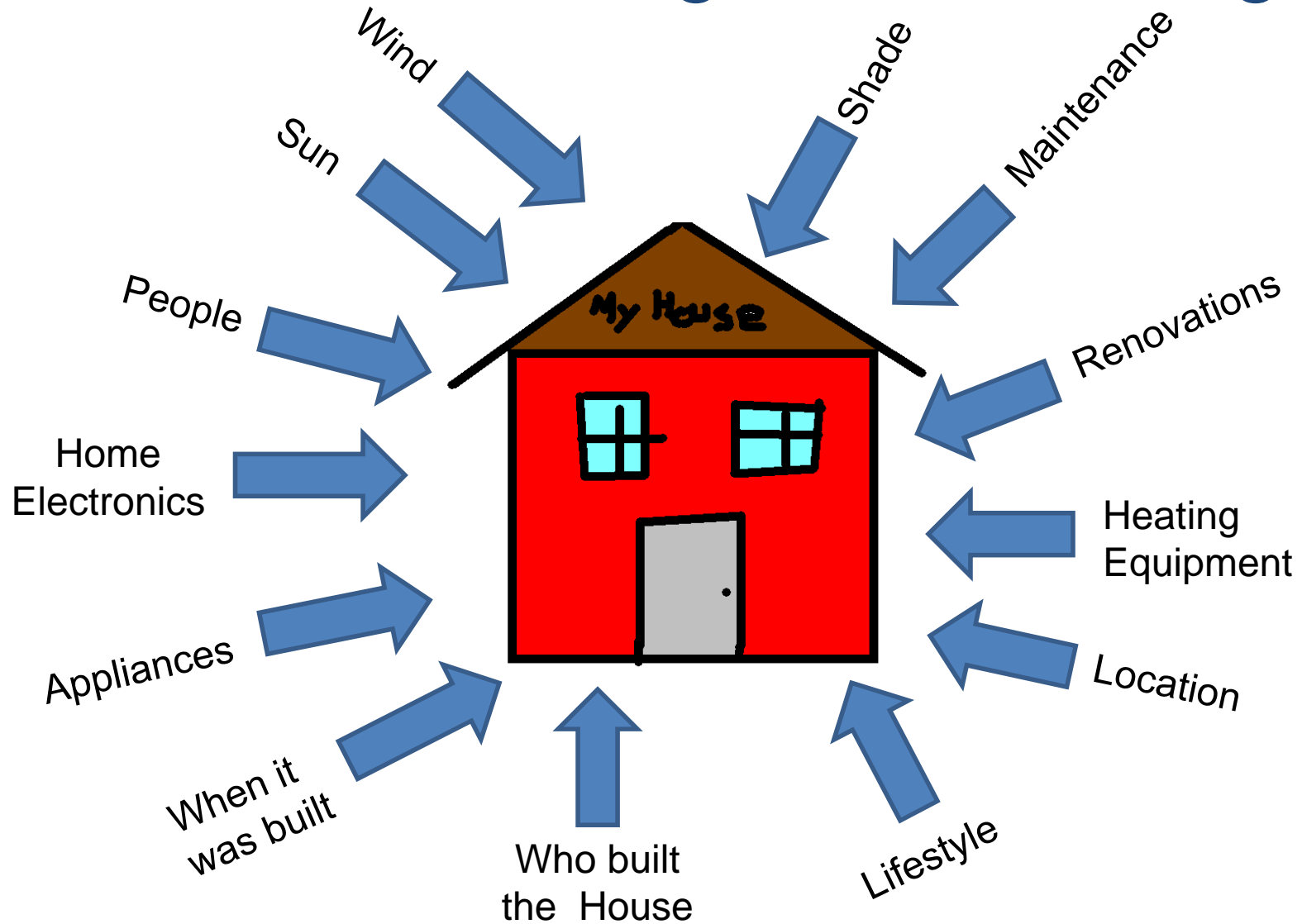


# You Probably Know

- Heating with the stove – avoid this
- Baseboard heaters require maintenance (vacuum, thermostat)
- Turning up the thermostat does not make me warmer faster
- Wood stoves – only if installed properly and to all code requirements



# Factors Affecting Home Heating



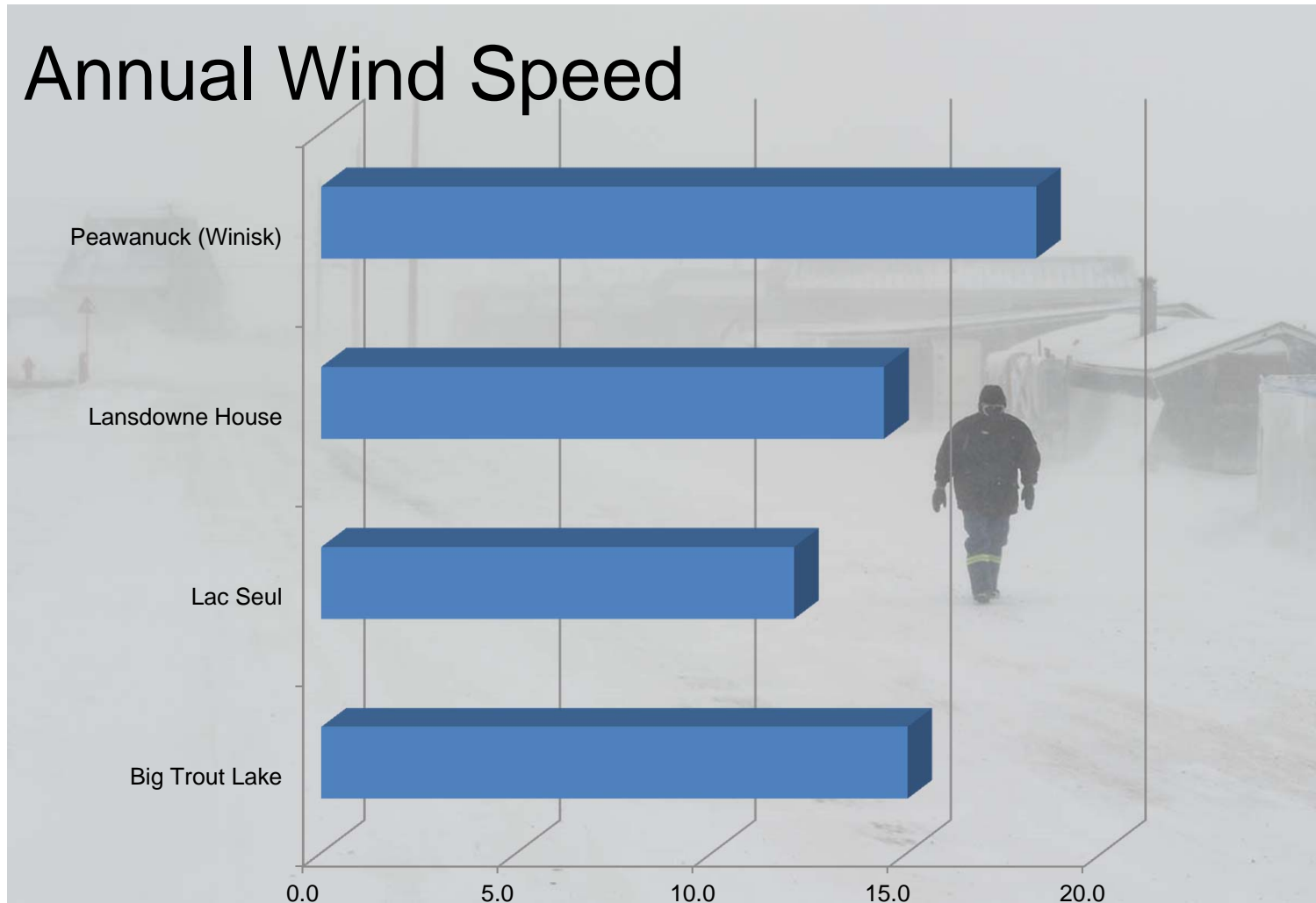
# Factors Affecting Home Heating

## Geographic Location



**Annual Heating Degree-Days Below 18°C**

# Factors Affecting Home Heating



# Factors Affecting Home Heating



Wind effect

- Wind pushes out the warm air inside
- The cold air pushed inside the home has to be warmed up
- Repeat – the more air that is pushed in and out results in higher heating costs



# Factors Affecting Home Heating



Air Infiltration



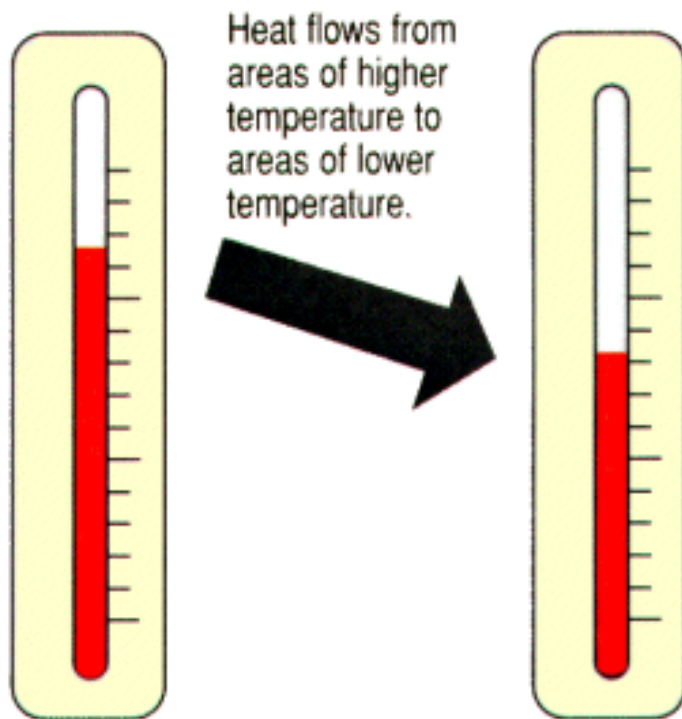
Cold Feet



Up goes the thermostat

# Factors Affecting Home Heating

## How Warm You Keep Your House



- The greater the temperature difference between inside and outside, the more heat flows from inside (where it's warm) to outside (where it is cold)
- A house at 80F loses more heat than the same house at 70F

# What Can I Do?

Lots of low cost & no cost energy efficiency items

- BUT

- Who is responsible to do what repairs and maintenance?
- Who pays for the materials?
- What should be done first?
- How to do it properly?

# What Can **WE** Do?

## Start the **Conservation Conversation**

- What does this mean?
  - Getting beyond the ‘frustration’
  - Looking for and identifying solutions

**Doing the ‘same old same old’  
will not lead to solutions**

# The Conservation Conversation

Is a process:

- There is no step-by-step 'manual' to follow
- Each community is different
- Each have their own way of identifying and solving issues

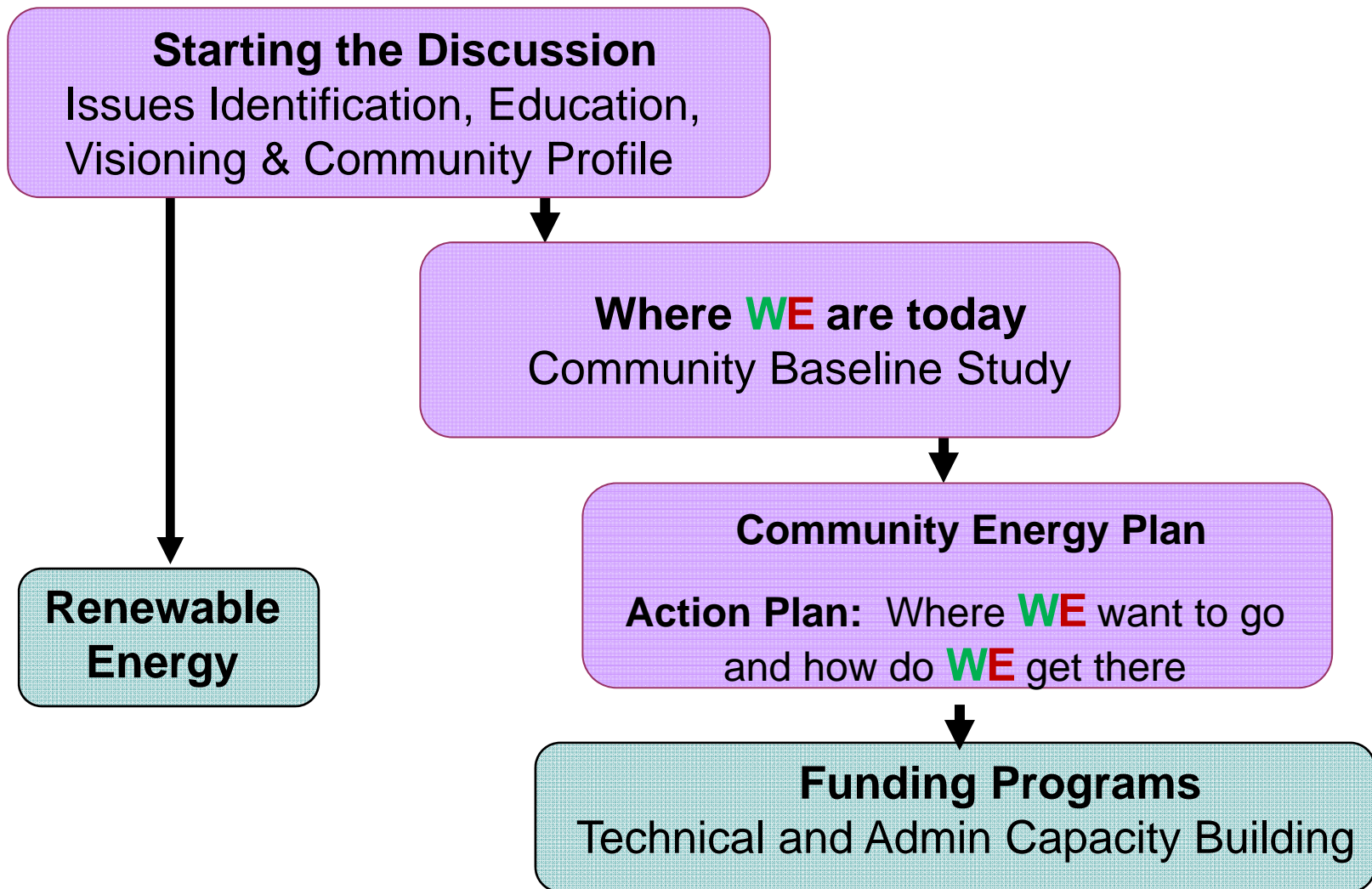
The purpose is to develop a

**C**ommunity **E**nergy '**A**ction' **P**lan

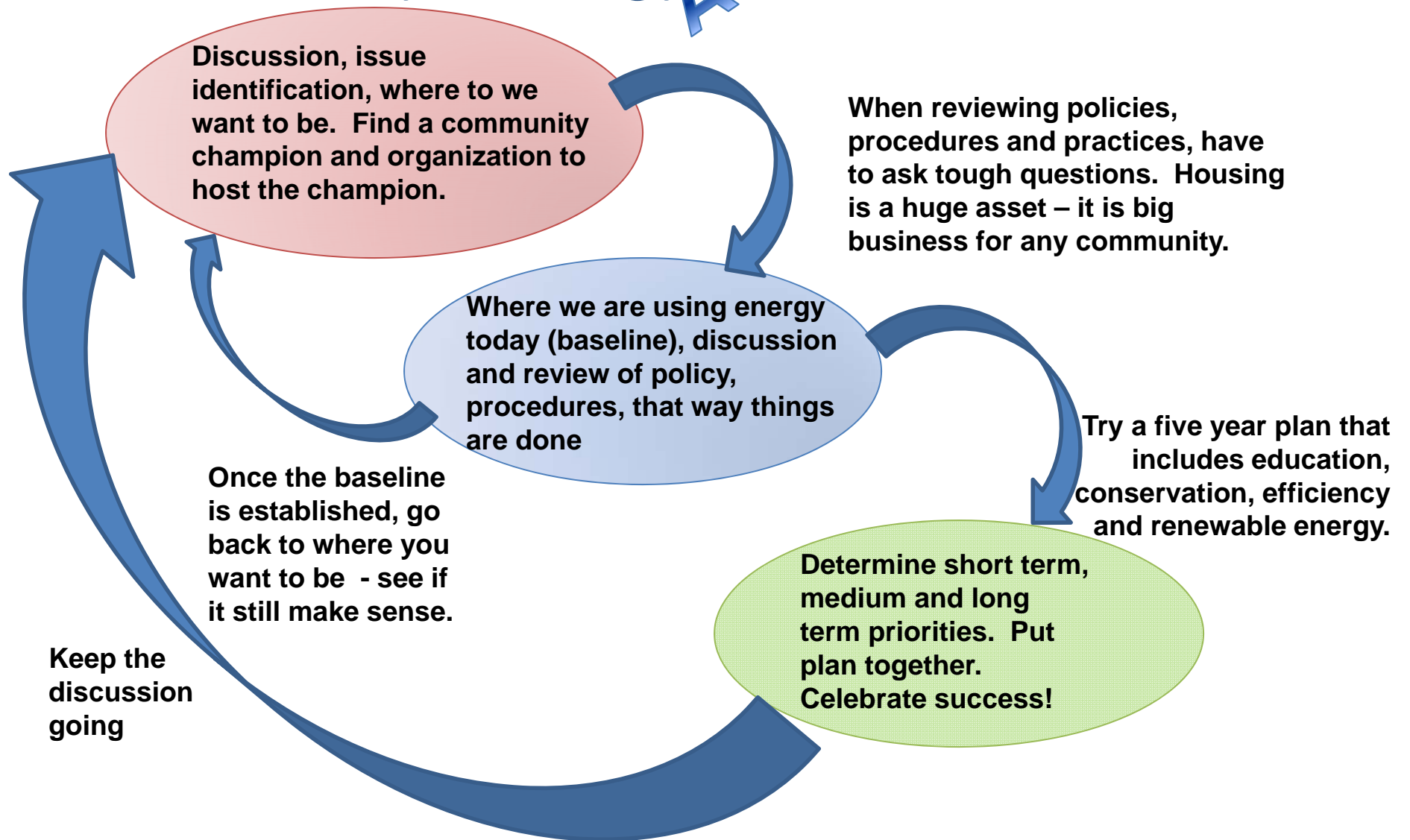
# Community Energy Action Plan

- Sets out the actions to be taken to manage energy use
- Is a living document
- Has to reflect the changing needs of the community
  
- Is a lot of work
- Addressing issues that have developed over years – no ‘silver bullet’

# What's the CEP Process



# Community Energy **Action** Plan





# What is a Community Energy Plan

## A process to

- Understand how energy is used within a community
- Identify opportunities to conserve energy
- identify what the community can do on its own to better conserve  
identify renewable energy opportunities, big and small, understand the risks and rewards
- Begin the discussion if a community wants to pursue a renewable energy project
- Establish energy goals for the community
  - Policies and procedures, planning objectives
- Establish community priorities and identify needed resources
  - Match to OPA and other programs
- Establish success measures
  - Achieving energy goals/targets and effectively communicating the achievements to the community

# Community Energy Plan is **NOT**

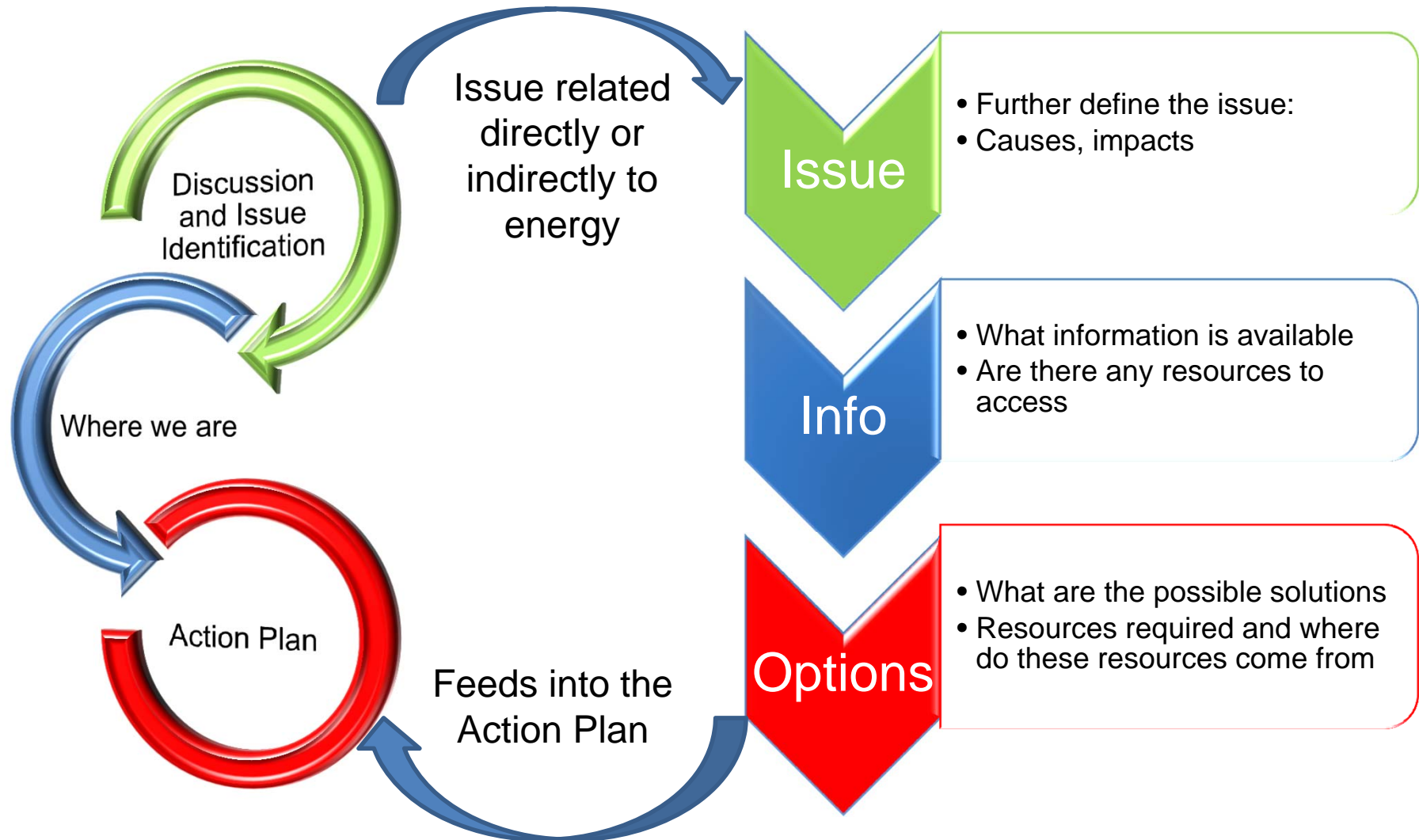
- The answer to individual community members high energy bills
  - Individual has to take action/ownership
- Will not provide everyone in the community with free energy
  - Generation projects don't relieve this responsibility
- A “stand alone” program
  - Conservation programs, FIT, micro-FIT, Adder, etc.
  - Be tied to community policies, practices, procedures
- Will not be the sole solution to “solving” housing issues (new/existing)

# How do WE fix this?



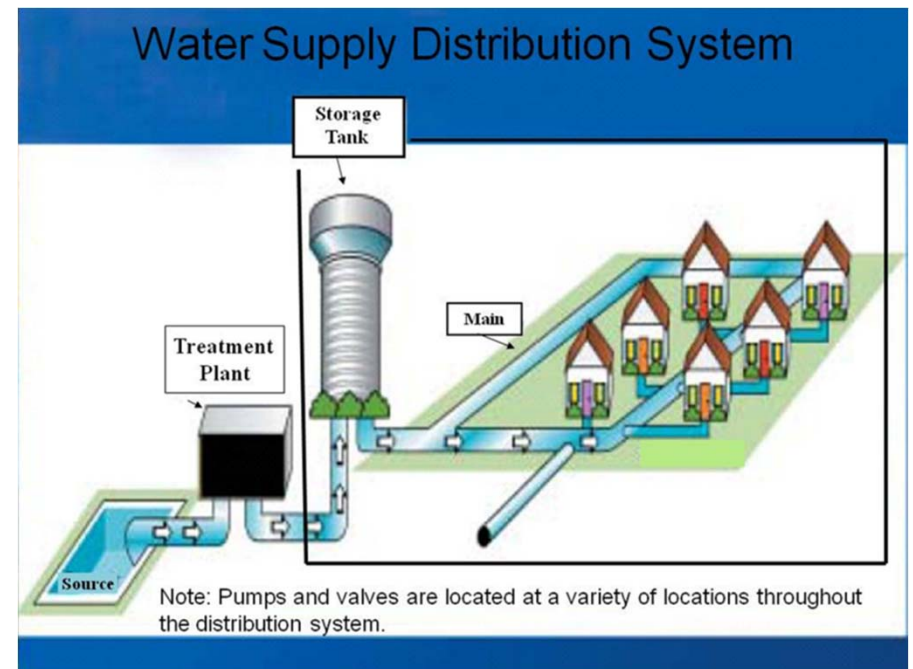
- Furnace filter had not be replaced in 7 yrs
- How did this happen?
  - Did the occupant know they had to change the filter?
  - Are filters available in the community?
  - Where is the furnace located and can the filter be accessed?

# Addressing Issues



# Community Impacts

- Installation of low flow shower heads, faucet aerators and even low flush toilets.
- Individual savings(\$)
- Community savings (\$\$):
  - less water use, less pumping of water (use less electricity)
  - less chemicals required to treat the water
  - less water being pumped from the home



# Resources to Start the Process

## Your Community

- Financial records
- Housing files
- Maintenance records
- Housing staff
- Land Use/Environment plans
- Community/Economic development plans
- Health plans and staff

## External

- Hydro One/ Remotes
- CMHC
- Tribal Council
- First Nations Northern Housing Conference
- Fednor/AANDC/RRAP
- NADF
- NAN
- IESO/OPA

# Built Upon **Y**our Needs



# The Importance of the Conservation Conversation





# Starting The Conservation Conversation Journey



- It is a long road
- There will be things to fix along the way
- Working together will lead to positive results



# Thank-You

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# Resources

- First Nations Northern Housing Conference
  - <http://www.northernhousingconference.com/conference.html>
- Canadian Mortgage and Housing Corporation (CMHC)
  - <https://www.cmhc-schl.gc.ca/en/ab/index.cfm>
- Hydro One Remotes – Lori Rice
  - [lori.rice@HydroOne.com](mailto:lori.rice@HydroOne.com)
- Fednor
  - <http://fednor.gc.ca/eic/site/fednor-fednor.nsf/eng/home>
- IESO/OPA Aboriginal Community Energy Plans
  - <http://aboriginalenergy.ca/aboriginal-community-energy-plans>