Aklavik

Climate Change 2018

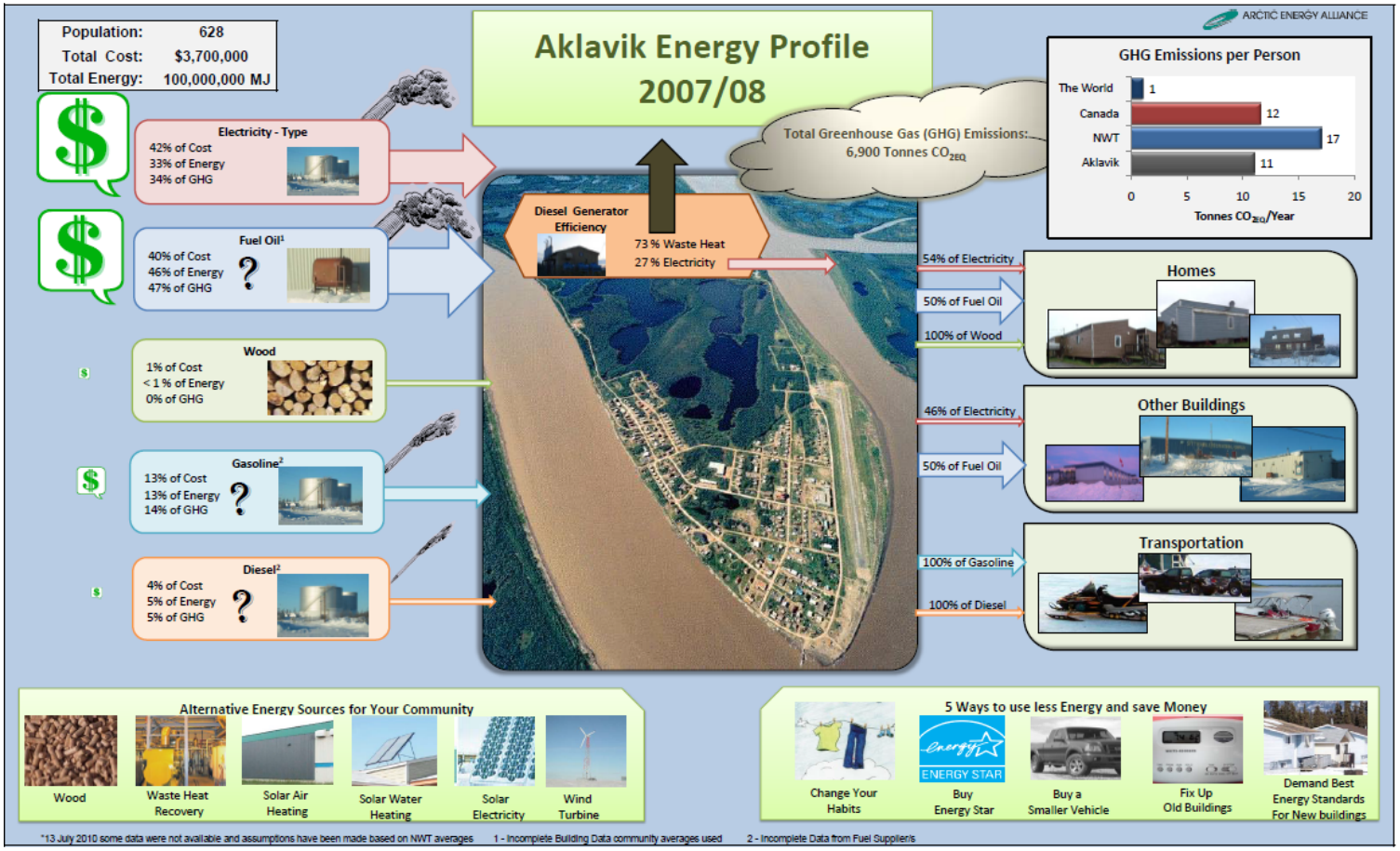
Aklavik Breakup 2006

Charles and Anne Lindbergh land in Aklavik, August 5 1931

Rainstorms and highwater levels on Mackenzie and Peel rivers pushed cabin away

CBC News · Posted: Jul 18, 2012 4:37 PM CT | Last Updated: July 19, 2012

Aklavik today


Population: 628
Total Cost: $3,700,000
Total Energy: 100,000,000 MJ
Aklavik Energy Profile 2007/08
ARCTIC ENERGY ALLIANCE
Electricity - Type
42% of Cost
33% of Energy
34% of GHG
Fuel Oil[1]
40% of Cost
46% of Energy
47% of GHG
Wood
1% of Cost
< 1 % of Energy
0% of GHG
Gasoline[2]
13% of Cost
13% of Energy
14% of GHG
Diesel[2]
4% of Cost
5% of Energy
5% of GHG
Diesel Generator Efficiency
73 % Waste Heat
27 % Electricity
Total Greenhouse Gas (GHG) Emissions: 6,900 Tonnes CO_{2EQ}
GHG Emissions per Person
The World 1
Canada 12
NWT 17
Aklavik 11
0 5 10 15 20
Tonnes CO_{2EQ}/Year
54% of Electricity
50% of Fuel Oil
100% of Wood
Homes
46% of Electricity
50% of Fuel Oil
Other Buildings
100% of Gasoline
100% of Diesel
Transportation
Alternative Energy Sources for Your Community
Wood
Waste Heat Recovery
Solar Air Heating
Solar Water Heating
Solar Electricity
Wind Turbine
5 Ways to use less Energy and save Money
Change Your Habits
Buy Energy Star
Buy a Smaller Vehicle
Fix Up Old Buildings
Demand Best Energy Standards For New buildings
*13 July 2010 some data were not available and assumptions have been made based on NWT averages
1 - Incomplete Building Data community averages used
2 - Incomplete Data from Fuel Suppliers

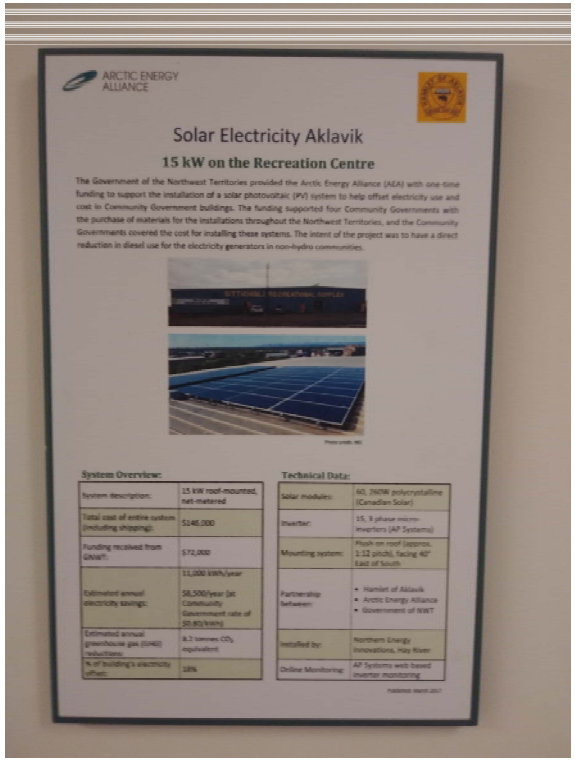
SAO Staff House with 3Kw Solar installed 2015

Solar Panels on Staff House

Converted High Pressure Lights to LED 2015

Aklavik Peel River Garden Society 2016

Recreation Center 15Kw install 2016



Installing Recreation Solar Panels 2016

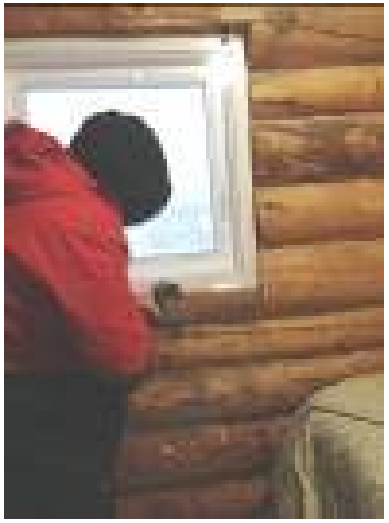
Solar Panels on Recreation Complex

NTPC’s 55Kw Solar System installed 2016 operational January 2018

Partnership begins AEA, NRCanada and the Hamlet of Aklavik

Introductory Workshop In Yellowknife
January 2017

Single Mothers workshop insulating your home and energy saving tips 2017



Youth Center/Swimming Pool converted all lighting to LED and upgraded HVAC 2017

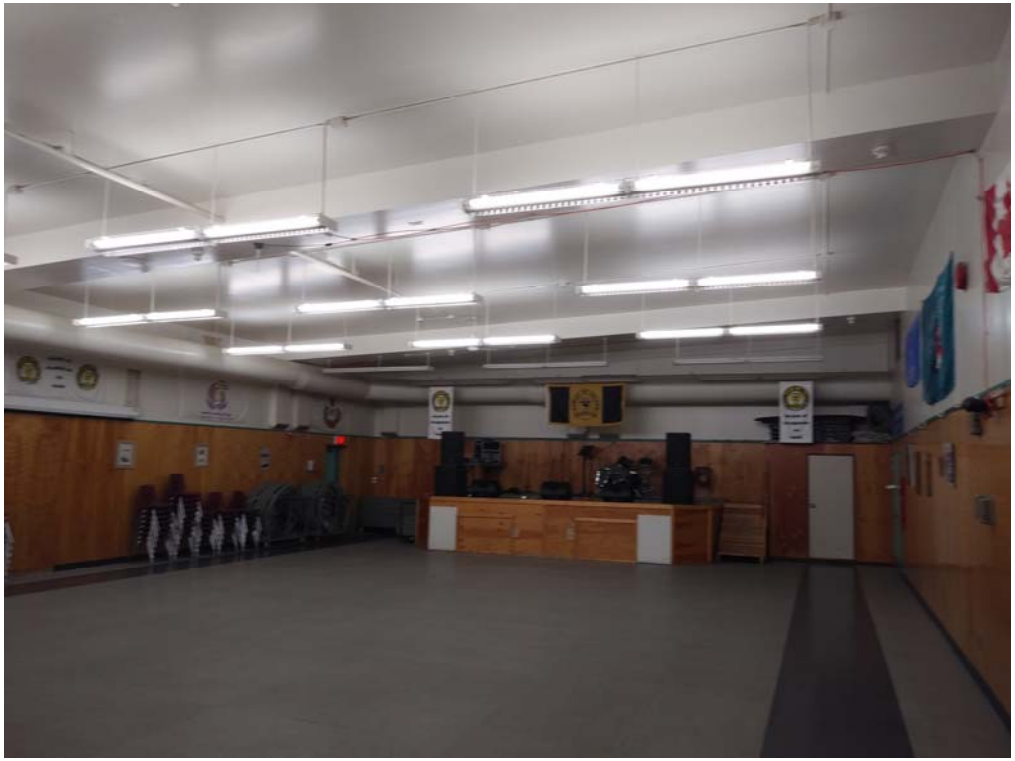
Lighting and Censor Upgrades

Building Name	T12, T8 or T5 bulbs → LED (# of fixtures)	Occupancy sensors	Exterior lighting HID → LED	Emergency lighting
Arena Complex	200 bulbs, (79 fixtures)	5	-	
Fire Hall	75 bulbs, (32 fixtures)	2	-	3 remote heads
Youth Center/ Pool	100 bulbs, (42 fixtures)	-	5	11 remote heads
Curling Rink	230 bulbs, (102 fixtures)	-	6	2 batteries
Total	605 bulbs, (255 fixtures)	7	11	

Building name	Electricity	Oil	Savings	Cost	Payback	Reduction in GHG emissions
Arena	16,600 kWh	-1,400 L	$12,600	$18,100	1.4 years	9.2 tC02e
Fire Hall	4,700 kWh	-380 L	$3,500	$9,100	2.6 years	2.6 tC02e
Youth Center/Pool	2,700 kWh	-130 L	$2,100	$13,900	6.5 years	1.7 tC02e
Curling Rink	11,200 kWh	-340 L	$9,200	$20,800	2.3 years	7.8 tC02e
Water Treatment Plant	2,500 kWh	-130 L	$2,000	$4,300	2.1 years	1.6 tC02e
Maintenance Garage	1,800 kWh	-140 L	$1,500	$6,000	4.0 years	1.0 tC02e
Total	40,000 kWh	-2,500 L	$31,000	$72,000	2.3 years	23.9 tC02e

Sittichinli Recreational Complex converted all lighting to LED and upgraded HVAC 2017

Sittichinli Community Hall Side with LED upgrade 2017



New Fitness Center Built 2017 attached to Complex

Firehall HVAC upgrade and light conversion 2017

Work Identified during HVAC scoping visit and approved by Council

Building Name	Work list
Arena Complex	• Service & clean the HRVs • Service the oil fired water heater • Install programmable thermostats • Install log book in mechanical room and HRV room
Fire Hall	• Boiler oil burner service • Install a Tekmar boiler controller • Install a section of larger diameter fuel pipe inside building to allow oil to warm up before combustion. • Install a side-stream filter to help keep glycol clean. • Replace existing large electric water heater with small space saver model • Extend return air duct down to low level to pull cool air from floor • Replace existing large unit heater with two smaller unit heaters • Replace force flow heater with a section of 1 1/4 baseboard radiation • Install programmable thermostats • Install log book in mechanical room
Youth center/ pool	• Install a backdraft damper on pool exhaust air • Revise heating piping over the door in the hall to reduce chance of trapped air • Install programmable thermostats • Boiler oil burner service • Install a sidestream filter to help keep glycol clean • Insulate bare copper heating piping in crawlspace Approximately 100Ft • Install log book in mechanical room and crawlspace
Curling Rink	• Install a sidestream filter to help keep glycol clean • Boiler oil burner service • Install programmable thermostats • Install log book in mechanical room

Expected savings from heating project

Building name	Electricity	Oil	Savings	Cost	Payback	Reduction in GHG emissions
Arena		8,900 L	$14,800	$6,500	0.4 years	23.9 tC02e
Fire Hall	2,200 kWh	3,400 L	$7,500	$37,000	5.0 years	10.7 tC02e
Youth Center/Pool		4,000 L	$6,600	$18,000	2.7 years	10.8 tC02e
Curling Rink		4,400 L	$7,300	$20,000	2.7 years	11.8 tC02e
Total	2,200 kWh	20,700 L	$36,000	$81,500	2.3 years	57.2 tC02e


K.K.LAVIK
VOLUNTEER
FIRE
DEPARTMENT

Aklavik Curling Rink converted all lights to LED inside and outside upgraded HVAC 2017

Water Plant Light conversion 2017

Public Works Garage Light Conversion 2017

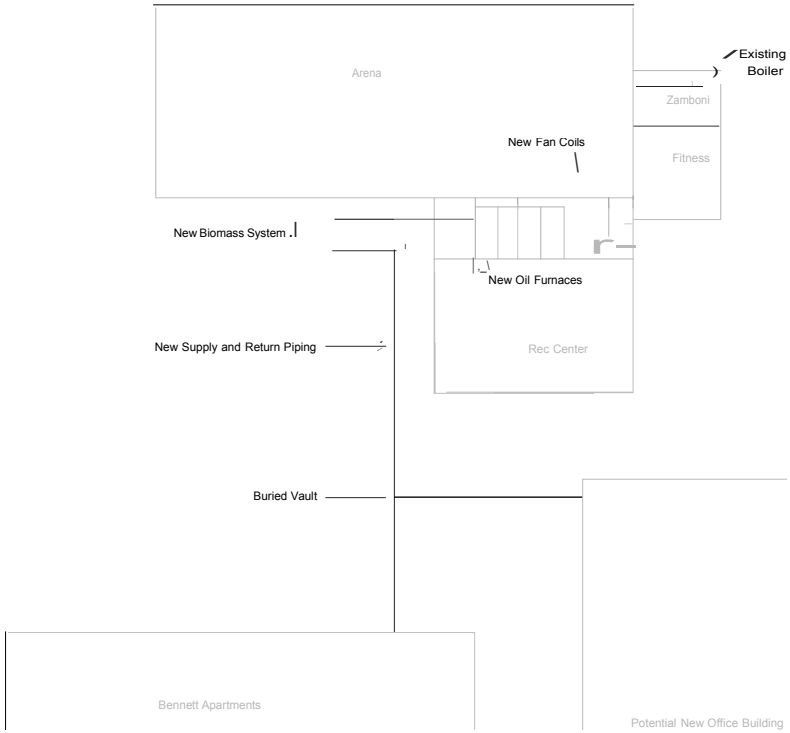
Updated and Council Approved Strategies of Community Energy Plan

Updated List of Recommended Strategies in our Community Energy Plan	NRCan funding	Capital cost estimate	Savings estimate ($/year)	Savings (GHG tonne CO_2/year)	Payback	Other funding available?	Funding potential	Payback with funding
1. Complete a series of energy efficiency audits and retrofits for non-residential buildings in Aklavik (Original plan strategy).								
Community Government Buildings only	yes	$107,000	$50,000	64	2.1	Com. Gov't Retrofit	$35,000	1.4
2. Complete a series of homeowner energy evaluation and retrofits (New strategy).								
20 households	yes	$94,000	$15,500	37	6.1	ERS and EEIP	$28,000	4.3
All privately owned houses (~60 households)	yes	$282,000	$46,600	111	6.1	ERS and EEIP	$83,000	4.3
3. Provide winterization and home maintenance workshops (including training for students and help for elders) (New strategy).								
Workshop at school for students + materials for implementation of measures in 20 homes (elders +)	yes	$29,000	$2,200	4	13.2	No?	$0	13.2
4. Switch all washers and fridges to Energy Star and switch all lights to LED in homes (New strategy).								
Switch 20 households' fridges + washers (~20 households)	yes	$60,000	$4,600	10	13.1	EEIP	$12,000	10.5
Switch all private homeowners fridges + washers (~60 households)	yes	$180,000	$10,600	25	17.0	EEIP	$36,000	13.6
Switch all private homeowners to 100% LED lighting (~60 households)	yes	$13,000	$6,900	22	1.9	EEIP	$6,400	0.9
5. Provide solar or solar/wind hybrid systems for bush camps (New strategy) & training.	no	$69,000	$2,100	3	33.0	AETP + ASETS	$27,000	20.1
Small solar set-up at 5 camps + training of 1 person								
6. Install wood stoves in homes (New strategy).	no	$120,000	$31,000	86	3.9	EEIP	$15,000	3.4
Purchase and installation in 20 households								
7. Increase local food availability and knowledge (New strategy). Greenhouse, use waste heat from NTPC generator, workshops, etc.	no	?	?	?		ITI		

*Note that these calculations are rough estimates based on class D estimating, at best +/- 40% . Once more information is available, these estimates can be narrowed down.


SITTICHINLI RECREATIONAL COMPLEX

Bio-Mass Heating system applied for funding under the NR Canada Clean Energy for Rural and Remote Communities May 2018



Currently in the Second Phase of the Process October, 2018

- **CLEAN ENERGY FOR RURAL AND REMOTE COMMUNITIES (CERRC)**
- **BIOHEAT PROGRAM STREAM**
-
- RISK ASSESSMENT QUESTIONNAIRE
- TO BE COMPLETED BY APPLICANT

Reusing Tires for Erosion Control used 22 commercial tires bolted together in 3 rows

Aklavik's own Olympians,
Kevin Koe, Sharon and Shirley Firth

Thank you

- INUVIK, N.W.T. (Dec 27, 2007)
- Charlie Furlong knows the lands and waters of the Mackenzie Delta like a childhood chum, but now his old friend is acting strange.
- "The Gwich'in, you know, we're used to adapting, so that's what it is now," says Furlong, chief of the Aklavik Gwich'in First Nation, tucked high up in the top left shelf of the continent.
- Viewed from the south, Arctic climate change can seem a confusing ecological and geopolitical tangle, accompanied by a media montage of stranded polar bears and melting sea ice, along with political debate that gives a whole new meaning to the phrase "gas-emitting."
- But from the stance of one man on the land he loves, it's not so complex.
- "It's a lot warmer," Furlong says. "Winters are not as long as they used to be.
- "(The river's) high in the spring and the cycle of animals is not the way it used to be. They're seeing strange birds that never used to come this far. A couple years ago, they saw a blue heron.
- "In Aklavik, where I come from, they've seen seals in the area. They had a whale this summer, and in fall they had polar bear come up into the area. Animals are migrating further than they normally should in search of food."
- Furlong shrugs. "Elders always say that's God's way of testing us."
- If so, Furlong's people are being tested harder than almost anyone on earth. His corner of the world is a global hot spot for climate change, where consequences are expected to hit first and hardest.