Interior Regional Housing Authority

# Energy Management

# "A Step towards Conservation for Interior Alaska Tribes"

Final Report

Presented to:

U.S. Department of Energy
Tribal Energy Program

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DE-FG36-07GO17090, A000

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# Project Data

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| **Partners:** | Hughes Tribal Council and Huslia Tribal Council |
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# Executive Summary

This project includes a consortium of Tribes. The Tribes include Hughes (representing the consortium) Birch Creek, Huslia, Allakaket, Kaltag, Anvik, Grayling, Holy Cross, and Shageluk.

The Interior Regional Housing Authority will serve as agent/representative/consultant to these Tribes in regard to facilitating the objectives of this grant.

The Interior Regional Housing Authority has a company-wide responsibility for minimizing energy uses and for implementing and maintaining an energy management program. The program seeks to achieve both energy savings and provide optimum energy requirements to support each Tribe's mission.

The energy management program will be a comprehensive program that considers all avenues for achieving energy savings, from replacing obsolete equipment, to the design and construction of energy conservation measures, the implementation of energy saving operation and maintenance procedures, the utilization of a community -wide building energy management system, and a commitment to educating the Tribes on how to decrease energy consumption. The main goals of this program are:

1. **Reducing energy through education.**
2. **Explore and research alternative sources for energy**.
3. **The final goal is to develop long term energy plans for each community.**

With the implementation of this program and the development of an Energy Management Plan these communities can then work to reduce the high cost of living in rural Alaska.

The project proposed by Interior Regional Housing Authority on behalf of the villages of Hughes, Birch Creek, Huslia and Allakaket is to develop an energy conservation program relevant to each specific community, educate tribe members and provide the tools to implement the conservation plan. IRHA coordination will lead to efficiencies that will allow for benefits to four separate and unique communities. All avenues for achieving energy savings, from replacing obsolete equipment, the implementation of energy saving operations and maintenance procedures and methods on how individuals can decrease energy consumption will be explored. The overall goal of the project is to reduce energy usage and energy costs to selected villages in the region.

The villages served by IRHA experience some of the highest energy costs in the nation while earning incomes is significantly below the national median income Recent increased oil prices have exacerbated the situation, making energy conservation in the region imperative; both for the preservation of natural resources and for the economic health of individual tribe members and the communities overall. The problem of energy delivery and energy costs in rural Alaska is multi-faceted. IRHA and the villages it serves believe a reasonable start to a long term energy strategy for the region is to reduce the amount of energy consumed. It is one of the few variables in a difficult equation that has long defied an easy solution. Individuals can exert some control over the costs they face, even while larger issues associated with costs are beyond their control.

# Project Overview

Reduce Energy through Education

- Educational presentations
- Compile community data
- Awareness of energy usage and how to conserve on an individual and community level
- Work with residents to achieve energy savings

Explore and research alternative sources of energy

- What's going to be the best option for that community and provide the data to the community
- Where can communities get funding to apply for alternative energy sources

Develop long term energy goals for each community

- Develop a comprehensive plan
- Energy Conservation Training

Energy Conservation Program specific to each community

**Reducing energy through education.**

a. Make a minimum of two educational presentations over the course of one year, in the communities of Hughes, Birch Creek, Huslia and Allakaket.
b. Compile community specific data and show examples of proven energy saving strategies.
c. Develop community specific presentation materials, brochures act.
d. Have activities that integrate the concept of energy efficiency.

**Explore and research alternative sources for energy**.

e. Develop tracking mechanisms that will provide the data needed to develop energy management plans.
f. Utilize a village "energy liaison" person in each village to gather data.
g. Develop relationships with the U.S Department of Energy, the Alaska Energy Authority to explore energy opportunities.
h. IRHA specialty trades will work to gather data and information for "best practices" to delineate to the villages.

**The final goal is to develop long term energy plans for each community.**

i. Working with the Tribes IRHA will develop a comprehensive plan.
j. Over a one year period members from the IRHA Team will be traveling to each village twice to look at the current systems and usage, hosting a one day Energy Conservation Training on how to make the best use of energy, alternatives, appliances and energy education.
k. The Energy Specialist, with the Village "Energy" Liaison, the community and tribal council, and the IRHA mechanical and electrical specialty trades, will draft an energy management plan that will be presented to each of the respective tribal council for approval.

IRHA's Energy and Infrastructure Department continues to see positive results in the following areas: community energy education development, end-use efficiencies, obtaining authority from villages to designate IRHA as their Energy and Infrastructure Agent, applying for grants on behalf of villages for energy upgrades and education, securing support from school districts, introducing project goals and benefits to selected sub-region, and designating three-year activities and a draft budget. We are confidently forging ahead to provide services in communication, community planning, and construction design improvements. So far there has been a very positive response from community leaders, school districts, state legislators, the Denali Commission, and USDA for our proposed project.

After meeting with a selected sub-region of six villages, IRHA has a better grasp of their concerns and areas they would like IRHA to address. These concerns are very little structured input from community leaders, lack of long-term comprehensive community planning, lack of communication between funding agencies and community members, design flaws in infrastructure projects, dramatically high energy costs, unreasonably high operation and maintenance costs, and lack of follow-up once projects are "completed." We have been receiving resolutions from the sub-region authorizing us to use them as a pilot project to address these issues. We will address their concerns through three main service areas: communication, construction, and planning.

Communication is key to successful community projects. We communicate on a regular basis with community entities on all planning, design, energy, and maintenance and operation needs. We have been communicating constructively with communities for over thirty years. This proposal is taking the next logical steps. We will apply the same communication to infrastructure projects as we have mastered in building homes in the last ten years. Successful communication leads to community ownership and project follow-up.

Construction is another primary focus area because many project designs are not adequately addressing community needs. Our construction department has committed to providing support wherever needed, as well as increasing staff. Successful construction design and maintenance leads to reduced costs and increased efficiency in improving the quality of life in these communities.

Lastly, we will address the lack of comprehensive community plans. This will be done through training and workshops where necessary and by bringing all community entities together on a local and sub-regional level to face rural challenges head-on and produce innovative solutions. Successful community plans lead to self-determined futures and ownership of project results.

# Objectives

Develop an energy conservation program relevant to each specific community, educate tribe members and provide the tools to implement the conservation plan. The program seeks to achieve both energy savings and provide optimum energy requirements to support each tribe's mission

**Workshop Objectives**

-Introduce energy reduction strategies for individuals, families, and community levels
-Begin community energy planning
-Begin energy assessment – checklists
-Meet with relevant community entities
-Meet with students at school to discuss energy savings
-Meet with students at school to discuss energy savings
- Create a vision statement
- Establish goals
- Link energy program s with community goals
- Establish timelines
- Roles and responsible or IRHA and community
- Establish partners

**Energy Conservation Practices and Goals**

Buildings and facilities will be operated in the most energy efficient manner without diminishing the quality of research and education.

1. Energy efficiency improvement measures will be identified to the greatest extent possible, and all necessary steps will be undertaken to seek funding for their implementation and, upon securing availability of funds, expeditiously implement the measures.
2. Construction, remodeling, renovation and repair projects will be designed, within budget constraints, for optimum energy utilization, lowest life-cycle operating costs, and in compliance with all applicable energy codes and regulations. Incorporation of energy efficient design features in project plans and specifications will receive a high priority within the available project budget.
3. Cost-effective renewable and non-depleting energy sources will be considered, wherever possible, both in new construction projects and in existing buildings and facilities. Load shifting technologies such as thermal energy storage will also be considered.
4. Necessary steps will be taken to provide adequate, reliable and cost-effective utilities infrastructure to meet the needs of present and planned future buildings and facilities.
5. The Interior Regional Housing Authority, on behalf of the consortium of Tribes will cooperate with federal, state and local governments and other appropriate organizations in accomplishing energy conservation and utilities management objectives, and educate the Tribes on the need for and methods of energy conservation and utilities management.
6. Energy usage will be monitored and reports prepared on a monthly basis.
7. A strategic energy plan will be developed and maintained, that will include recommendations in the areas of new construction, deferred maintenance, facility renewal, energy projects, and a structured energy management plan.

What we will accomplish

Communication:

- Travel to each village selected and host community meetings with governing bodies and the whole community
- Gather information on relevant economic and energy opportunities for villages and distribute to tribes
- Advocate for communities with funding agencies and state and federal government

Construction:

- Work with communities to apply for energy grants and install renewable energy projects when awarded funding.

Planning:

- Assess current and future energy needs for community
- Sit down with tribal councils, village corporations, city councils, and power operators individually and collectively to review and revise community plans to better address their infrastructure and energy needs

**Long-term Goal:**

- Collaborative energy-efficient, cost-effective, locally-driven SUCCESS STORIES in villages that can be implemented statewide!

## Description of Activities Performed

- Held Energy Workshops in all 9 villages
- Hughes, Hulsia, Allakaket, and Birch Creek had 4 community workshops each.
- Once the final workshops were complete we added 5 more villages: Kaltag, Anvik, Grayling, Holy Cross, and Shageluk.
- Worked with all 9 communities to create Energy Plans
- Assessments of community buildings were conducted
- Hired a local community member to collect Energy Use Data and track usage on community buildings
- Awareness of energy use
- Educated community members on energy efficiency and how they could save energy within their own homes and do their part in reducing the energy load and demand on the local generators.
- Hold a public meeting in each community
- Community Assessment
- Develop a mission or vision statement
- Link energy progr4ams with community goals
- Prioritize action and develop a plan

# Conclusions and Recommendations

Each Village created an Energy Plan for their community listing their priorities.

## IRHA Energy and Infrastructure Department - Hughes

Community Energy Planning Workshop

IRHA staff traveled to Hughes to facilitate an Energy Planning Workshop number four with the community. The meeting was held at the Tribal Office. There were approximately 19 participants that attended. This was a great turn out for a community of 80 people. We did a review of their energy plan and focused on what they needed for their community.

Conclusion: At this meeting they created a timeline including the Community Energy Priorities and other Community Priorities they had. They also had ideas on what funding sources to go after and apply for. One of the deadlines is coming up in the next couple of weeks. IRHA will be sending them all their information electronically so they can apply for funding using the information we collected.

**Energy Related - Timeline**

**Year One**

- Biomass – Apply for AEA grant
- Start wind study

**Year Two**

- Solar Power on a community building
- Continue Energy Education
- Increase End Use Efficiencies

**Year Three**

- Solar to the Clinic

Power Plant – might get waste heat recovery

Thought Geothermal was way too expensive. Heard it was $650,000 per mile.

**Other Community Priorities**

**Year One**

- Start a community tourism business to have a self sufficient economy.

Suggestions and Ideas

One of the community concerns are self sufficiency. There is so much going on in Hughes right now, the construction of two homes, building a new clinic, and the water sewer project. They want to continue to see their community thrive after all these projects are completed. A solution they saw was tourism. I suggest the Alaska Marketplace for seed money, along the with the

funding sources we suggested for the community energy projects: Alaska Energy Authority, Rasmuson Foundation, and Community Development Block Grant.

**Ideas for Tourism**
Log Caches
Kids telling stories & singing
All ages working together
Elders – equipment to document stories
Dog Mushing
Have an old Steam Boat

High prices of necessities are a major concern
Gas is currently $7.50
Propane bottle $280.00 – it has to be flown in

A community member cautioned - Be aware applying for grants and taking in projects that we may not be able to handle. Want to make sure we follow through with all the projects we request and get funded for.

Other topics
By 2010 the North Slope will have to convert to low sulfur diesel, everything will have to be converted, rigs, camps, forklifts, everything.

ANTHC needs a yard in Fairbanks
Takes too long to get supplies to Hughes from Anchorage, holds up the project

## IRHA Energy and Infrastructure Department- Huslia

Community Energy Planning Workshop

IRHA staff traveled to Huslia to facilitate an Energy Planning Workshop number four with the community. The meeting was held at the Tribal Elder's hall. There were approximately 18 participants that attended. We did a review of their energy plan and focused on what they needed for their community.

Conclusion: At this meeting they created a timeline including the Community Energy Priorities and other Community Priorities they had. I also shared ideas on what funding sources to go after and apply for. One of the deadlines is coming up on Nov. 10th and they thought that was way too soon, to get an application in. IRHA will be sending them all their information electronically so they can apply for funding using the information we collected. They also had plenty of questions regarding the weatherization program. Want to make sure IRHA follows thought with what they say their going to do. Outside agencies come into Huslia and promise all kinds of things and don't follow though. With this plan we're helping by providing a tool they will be able to utilize to request funding.

**Energy Related - Timeline**

**Year One**

- Wind – wind tracking station 2 miles out
- Energy Education

**Year Two**

- Hydro – study Koyukuk River as an energy source
- Solar Power – find out if AVEC charges out to other applicants for solar

Weatherization – will help with up grading appliances in residential homes. Buying energy star appliances for those homes who needed it.

**<u>Other Community Priorities</u>**

**Year One**

- Find funding for LED lighting

## IRHA Energy and Infrastructure Department – Birch Creek

Community Energy Planning Workshop

The 4 workshop participants were community made up of community and council members. We reviewed the final steps of completing an energy plan. There were a few changes to the priority list since May, so we tried to update and integrate the plans that complimented one another.

Conclusion: We created a timeline for the energy action plans and for the community goals. We were also able to share a few funding sources with them and give a little back ground on what to include when requesting funding, letting funders know they have an energy plan. Jackie's number one concern was education.

**Energy Action Plans - Timeline**

Year One

- Planning & Feasibility
- Explore
- Install
- Washeteria: Upgrade & Remodel

Year Two

- Construction of a Multipurpose Building
- Install End Use Efficiencies

Year Three

- Energy Camps: with UAF Credit – (w/ Voc. Ed Programs)

**Community Goals**

Year One

- Start a small store selling gas, food, miscellaneous items
- Hire a Health Aide
- Upgrade the electrical lines

Year Two

- Build a home, so a Tribal Member can move home. Use the village saw mill, will need funding for fuel, gas, electrical, and plumbing. People will move home, if they have a house.
- Community Library and Recreation Room

Year Three

- Art, Athletics, Educational Programs: Fire Training, Energy, & Construction

Year Four

- Upgrade Barge, have 2-4 tribal members get their 6 pack license

Vision Statement: Birch Creek will lower the cost of electricity through education and exploring local energy resources to become less dependent on diesel generation while maintaining a high quality of life and creating local jobs. (May 2008)

Action Plan (how we reach the vision):

1) Community planning—started spring 2007, workshops began March 2008
2) Education
3) Explore other energy sources
4) Feasibility studies on energy sources
5) Energy camp for education
6) End-Use Efficiencies
7) Install renewable energy technology
8) Look at alternative methods of refrigeration

Other community goals:

- Elder's travel for artwork workshops
- Fill community health aide position
- Seek funding for cultural activities
- Plan meetings at a campsite
- Get people to move home (in-migration)
- Create education/vocational programs (GED preparation, computer lab)
- Create higher education preparation programs
- Build a community library/recreation room
- Create jobs
- Create more stores
- Create position for a counselor in the community
- Create athletic programs

Current and Future Energy Partners:
Denduu Tribal Government, IRHA, State of Alaska, Alaska Energy Authority, Alaska Housing Finance Corporation, Department of Energy, US Department of Agriculture Rural Development, Denali Commission, Tanana Chiefs Conference, AK Department of Commerce and Community and Economic Development, Doyon Limited, Rasmuson Foundation, Rural Cap, Yukon River Inter-Tribal Watershed Council, and US Department of Housing and Urban Development (HUD).

## IRHA Energy and Infrastructure Department - Allakaket

Community Energy Planning Workshop

IRHA staff traveled to Allakaket to facilitate an Energy Planning Workshop number four with the community. The meeting was held at the Tribal Office. There were approximately 14 participants that attended, about half the group were elders. This was a great turn out; it was the coldest day so far this season, -20 degrees. Tiffany did a quick reviewed of their energy plan and focused on what they needed for their community.

Conclusion: At this meeting they created a timeline including the Community Energy Priorities and other Community Priorities they had. They also had ideas on what funding sources to go after and apply for. One of the deadlines is coming up in the next couple of weeks. An energized community member was so committed to seeing these projects through she offered to volunteer her time and effort to fill out for the first grant.

**Energy Related - Timeline**

**Year One**

- Waste Heat Recovery; clinic, washeteria and tribal hall
- Solar Power to the washeteria

**Year Two**

- Solar Power to the Clinic
- Start researching and tracking wind from the airport monitors

**Year Three**

- Solar to the Tribal Office

**Year Four**

- Wind Power
- Pellet and/or Chip Producer

**<u>Other Community Priorities</u>**

**Year One**

- New Health Clinic (no running water)

Can starting working on

- Youth focused activities/facilities
- A better service from the power provider AP&T

**Year Two**

- Moving homes out of flood plane

**Year Three**

- Winter road from Allakaket to Bettles/Evansville

**Year Four**

- Fixing roads going up and down the hill, should be at a 10% grade

Suggestions and Ideas

When a contractor comes into your community, contact them and ask them questions, what their budget, who are the funding sources, what services are they going to provide. Then let them know what you have available in the community, what are the local resources and equipment.

Also you're the experts; you know the land and the area. You know what's going to work and what's not. Share that information with people what will be coming to Allakaket to work.

# IRHA Community Energy Workshops - Kaltag

22 Community members attended the workshop
The local population is about 188

Kaltag experiences a cold, continental climate with extreme temperature differences. The average daily high temperature during July is in the low 70s; the average daily low temperature during January ranges from 10 to below zero. Sustained temperatures of -40 degrees are common during winter. Extreme temperatures have been measured from -55 to 90. Annual precipitation is 16 inches, with 74 inches of snowfall annually. The River is ice-free from mid-May through mid-October.

Piped water and sewer has existed since 1982 in Kaltag. A circulating water and gravity sewage system is used. Water is derived from a well and is treated. The majority of households are fully plumbed. A washeteria is also available. Electricity is provided by AVEC. There is one school located in the community, attended by about 26 students. There is a local health clinic.

Subsistence is an important part of the local economy. Salmon, whitefish, moose, bear, waterfowl and berries are harvested. Most cash jobs are with the tribe, school, local government, BLM fire fighting, commercial fishing or fish processing. 18 residents hold commercial fishing permits.

**Cost of Energy**

$4.75 per gallon for gas
$5.50 per gallon for heating fuel

Average monthly electric bills are $120-$230 per month
.54 per kw with sur-charge
Water $62.50 per month

**Vision**

Kaltag would like to invest in alternative energy for community buildings, with an emphasis on solar panels. Kaltag would like to strive to be a self sufficient community, supporting the local economic development and not dependant on out side resources.

**Goals**

- Switch fuel to Natural gas – once the natural gas pipeline comes up
- Solar street lights (15 street lights)
- Re-open the fish plant
- Install wood fire boilers (do the research first)

- The city is starting to talk about adopting street lights, so people will have to pay for their light outside on the street by their homes.
- Solar on the well house would cut the cost significantly
- Possibly cut down the water delivery to each home
- Currently pay $62.50 per month for water and may go up soon
- Solar on the washeteria

- Sola street lights if possible
- Energy audit completed on each residential home in the community

**Community Support**

- AVEC
- IRHA
- YKSD - School District
- Tribe
- City
- Village Corporation – Gana-A' Yoo, LTd (with 4 other villages)
- AEA
- Surrounding Communities

**Timeline**

- Summer: Collect Data on local energy costs and alternative energy sources
- Winter – Apply for an alternative energy grant
- 1 year – Solar on a local community building
- 2 year – Solar for the Tribe and City together
- 3 year – Address the need for more efficient street lights

**Notes Suggestions:**

Invite other organizations to Tribal Membership meeting or even tor Tribal Council meetings, may be having bi-annual Tribal Membership meetings.
Solar graphics as a resource for solar panel information
Notes:
Energy Assessments on community buildings
Washeteria
School
Generator – Power House
Co-Op store
Clinic

# IRHA Community Energy Workshop - Anvik

About 30 people attended the community meeting

**Vision Statement:** The community of Anvik will educate community members on the importance of energy efficiency; and seek funding for clean Alternative Energy Projects, to become less dependant on heating fuel.

**Action Plans for homes:** Use timers and power strips, turn off breakers, if necessary when not home or traveling, and install and use energy efficient appliances.

**Action Plan**

Determine how much money we spend on electricity, community wide and in homes.
Build Community Support
Prioritize
Implement
Seek Funding

**Priorities**

Less dependence on heating fuel
Wood fire boilers on community buildings: City, Laundry, Clinic, & close houses
Educate youth & community involvement
Hydro
Wind & solar
Heat waste recovery w/ AVEC at the school
(Been out of order for about a year)
Waste oil Burner
Presenters from power company and state agencies on suggestions and solution to less dependence on fuel
More energy efficient homes, including new construction, retrofits, and weatherization (TCC will provide services in 2011)

Build and maintain partnerships with programs and organizations
Environmental Coordinator
IRHA
AVEC
Neighboring villages
DOE
USDA
AEA
Denali Commission

**Timeline**

| | |
|---|---|
| Today | Involvement community & education |
| 2 months | Contract Ruby about their Hydro Project |
| 3 months | Contact funding agencies |
| 4 months | Apply for funding |

| | |
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| 6 months | Apply for funding and revisit community plan |
| 8 months | Re-look at what's next |

Requested information on:
Energy Efficient Woodstoves
Federal rebate program with Tax info

Educate our youth
Wood fire boiler for: City, laundry & Clinic
School heat waste recovery – not working for about a year now (get it repaired)
Wind- Solar – Hydro
Energy Efficient: Boilers, water heaters, and oil stoves

Communities in the area work together on projects, as a group

Less demand on local generators – less use – lower cost to the consumers

More efficient homes
Community involvement, work together to use less energy
Less dependence on heating fuel:
Turn everything off at night
City and Tribe work together to apply for energy related funding opportunities

Electricity is about $140 to $350 per month in homes
Fill out communities surveys
Tax – rebate information: Appliances; woodstoves, insulation
Weatherization – TCC EA

# DOE Community Energy Workshops - Grayling

35 community members attended the energy workshop
170-180 population
Only about 8-10 elders in the entire community

**Cost of Energy**

Gas is $4.75 per gallon
$7.00 per gallon for heating oil
$175 for a bottle of propane
Electric bills range from $80-$90 in the summer months
$200-$350 in the winter months
AVEC is the electric company

**Vision**

Explore funding opportunities for Alternative Energy projects and work together as a community to use less energy and educate community members on becoming more energy efficient.

**Goals**

Research renewable energy such as Solar, Wind – TCC did a wind study a couple years ago, they have class 7 winds, Hydro – Build a Dam, and explore the option on using local coal which is 7 miles up river on the bank.

**Community Support**

Tribe
City
Village Corporation
School District
AEA
Surrounding Communities

**Timeline**

Within 1 year –
Data from TCC on Wind study
Seek and apply for alternative energy for the water plant – high cost to heat in the winter

2 years
Re-look at plan and make changes as needed
Research coal extraction from up river

Following up -
TCC Wind study

# IRHA Community Energy Workshops - Holy Cross

About 20 people attended the workshop
279 population in the last census
But several people moved since then due to the high cost of living
There are about 240 people now

**Cost of Energy**

$7.28 per gallon
$260 for a bottle of propane and $160 to refill
Monthly electric bills range from $80-$125 per month
AVEC is the electric company

Interested in Pellet stoves
Worried about inefficient wood stoves

**Vision**

Holy Cross would like to seek funding to install alternative energy projects to use within the community. Continue to stay updated and current with energy issues and establish a good working relationship with the power company and other service agencies. Educate community members on energy efficiency and work towards becoming less dependant on oil.

**Goals**

Install renewable energy sources
Solar
Energy Efficient Woodstoves
Wood fire boilers for water plant
Hydro
Wind
Waste Heat
Burn used oil
Be selected as the site for a demonstration super energy efficient house for the region.
Have an energy audit completed on each residential home in the community

**Community Support**

Tribe
City
Village Corporation
Avec
School District
AEA – Alaska Energy Authority
Surrounding Communities

**Timeline**

Within 1 year – Energy Audits to residential homes
Seek funding for

Solar
Energy Efficient Wood stoves
Wood fire boilers
At the community hall
On a few residential homes

Today – this summer
Funding for solar panels on school & clinic
Energy Audits on homes

Within the next year
Data – Information on wood fire burners and apply for funding

2 years
Re-look at plan and make changes as needed

Following up -
Send Ruby Hydro Information

Follow up with TCC on energy stimulus and getting residents new Toyo and Woodstove

# IRHA Community Energy Workshops - Shageluk

31 community members attended the community workshop

About 16 students attending the school
Community population 86 people

**Monthly Energy Cost:**
Tribal Building $150 up to $200 per month
Residential $120
Fuel $6.50 per gallon
Gas $6.00 per gallon

**Community Vision:** Shegeluk will seek funding to implement Alternative Energy sources to community buildings, work with local organizations to plan a bulk fuel orders for a lower cost. Educate community members on using less energy and involved youth in energy efficient projects,

**Community Goals**
Different building designs: more energy efficient, for new construction and retrofits.
Use efficient appliances
Wind Energy; find the study done on wind energy from students at the school
Education, educate the entire community on lowering the energy usage

**Community Support**
Youth Group
Committee
Village Corporation
City
School
Power Company – AVEC

5 Big Fuel Users in the community
School
Airport
City – Washeteria
Corporation

**Plan**
Seek funding: AEA, Denali Commission
Communication with Partners – Avec, City, Corporation, School
Share your success and successes and thank sponsors

**Timeline**
Today – this summer
Gather wind information from school,
Plan a bulk fuel order for this summer

Gather energy data from the community energy data collector – hire someone
Watch for funding opportunities

**Within the next year**
Research energy efficient appliances
Energy education programs for youth up to elders
Youth involvement

## Lessons Learned

Community education on energy efficiency, involved the youth and they can go home and teach other members in the household.
Educate people on what they can do within their homes to cut the overall community load and provide educational materials as handouts that are relevant to rural Alaska.
Research the numbers and usage of phantom loads to help homeowners recognize what to look for.
Research and suggest options for alternative energy projects suitable for the village, what's the best option for their community.