

Rural Alaska Community Action Program, Inc.'s

Energy **W**se Program



Rural Alaska Community Action Program, Inc.
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Energy Wise  **Program**

GOALS:

- Create jobs for rural Alaskans
- Lower residential energy burden in tribal communities

Additional Goals

- Demonstrate that education and simple efficiency improvements can make an important difference in lowering residential energy costs
- Provide a model component for energy plans – important to incorporate Energy Wise strategies in holistic energy plans

Energy Burden

in Energy Wise Communities

- Average kilowatt hour cost is \$0.22
- Average cost for 1 gallon heating fuel is \$5.40
- Average resident pays 19% of household income to home heating and electric bills - *\$1 out of every \$5.*

Demographics

in Energy Wise Communities

- 200 – 1,000 population
- 41 – 70% of adults not working
- \$27,000 median household income
- 30% poverty rate

Design

Targeted :

- Communities not receiving Wx services
- Tribal council hosts
- Low-income homes

- \$2.5 million in ARRA funding
 - CSBG funds from DHHS
 - 1 yr implementation, ending 9/10

Components

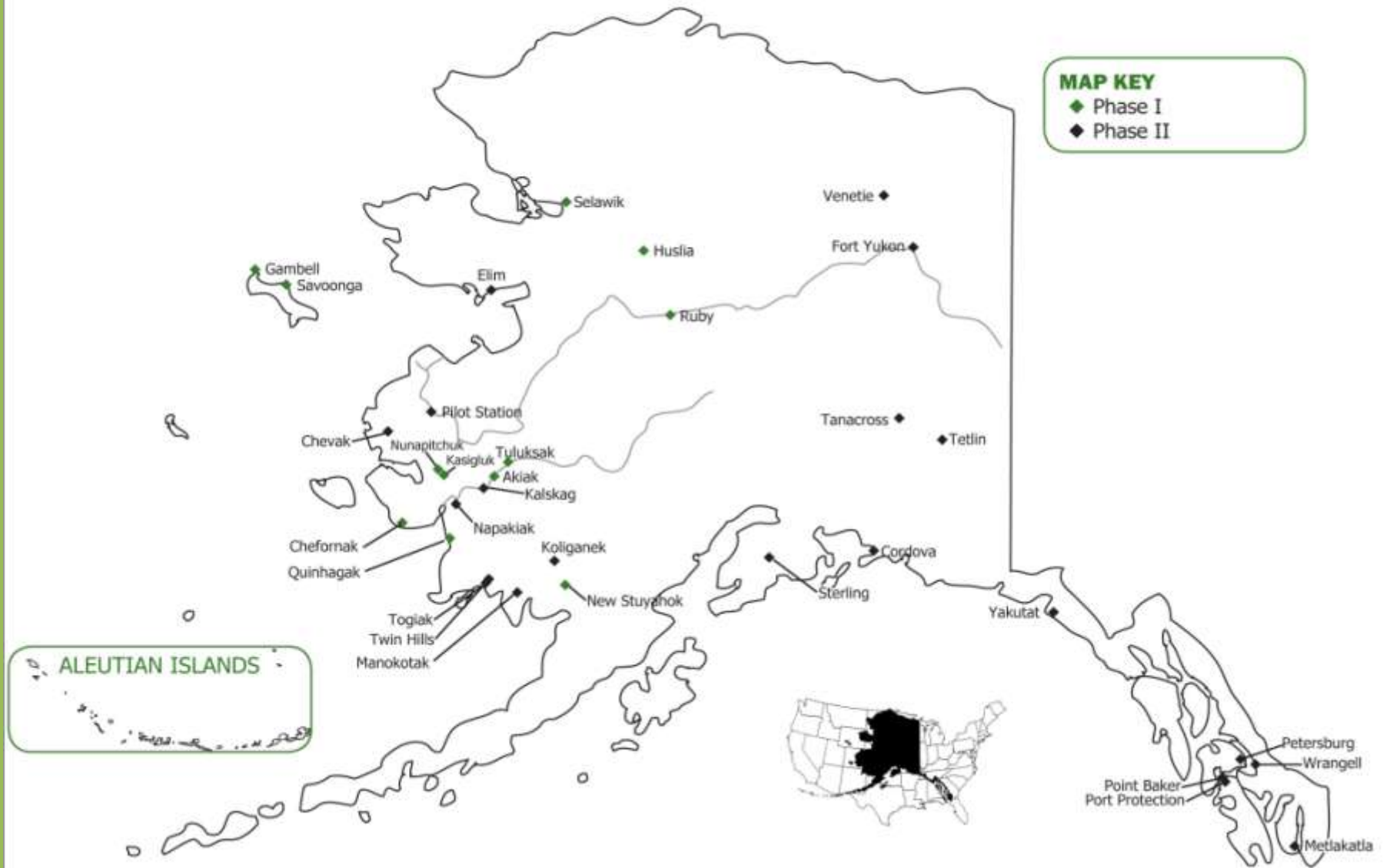
Energy Wise Crews - *Winter 2009-2010*

- 12 communities
- 1 crew chief, 10 crew members

Energy Wise Youth - *Summer 2010*

- 20 AmeriCorps/VISTA communities
- 2 youth per community

RurAL CAP 2010 Energy Wise Program Sites



Energy Wise Crew - Communities

Akiak

Quinhagak

Tuluksak

Kasigluk

Chefornak

Nunapitchuk

Ruby

Huslia

Gambell

Savoonga

New Stuyahok

Selawik

Energy Wise Crews

- Crew chiefs selected and trained
- Crew members selected and trained



\$300 in Home Supplies



- Window insulation film,
- CFLs
- Silicone and foam spray,
- backer rod foam,
- Weatherstripping,
- Foam tape and mounting tape,
- Pipe insulation,
- Faucet aerators and low-flow shower heads,
- Power strips
- Refrigerator thermometer and coil cleaners,
- Outlet and light switch sealers (insulation), press and pull plug protectors,
- Water heater blanket,
- Fire alarm and extinguisher, CO2 Detector

Work of Crews

- Energy Fairs and other education
- Home Visits
 - 2-3 crew members, 1 full day per home
 - Residential survey
 - Educate on EC and EE
 - Review energy bills and potential savings
 - Install \$300 worth of supplies
- Follow-up survey 3-6 months later

Energy Wise Youth - Communities

- Tanacross
- Yakutat
- Petersberg
- Sterling
- Tetlin
- Ventie
- Manakotak
- Kalskag
- Wrangall
- Chevak
- Elim
- Metlakatla
- Napakiak
- Togiak
- Koliganek
- Fort Yukon
- Port Protection
- Point Baker
- Pilot Station
- Cordova

Energy Wise Youth

- 2 youth hired for summer in each of 20 AmeriCorps/VISTA communities
- Youth & AmeriCorps/VISTAs trained



Youth Home Visits

- Homes surveyed
- EC and EE education performed
- Efficiency kits distributed



Energy Wise Outputs

- 160 rural Alaskans employed
- 32 villages
- 32 energy fairs
- 2,000 homes served
- 7,500 educated
- \$\$\$ energy and money saved

Energy Wise Outcomes

- Reduced home heating costs
- Reduced electric bills
- \$128/year in savings,
just in CFL replacements
- Behavior Change

Final Evaluation Underway

- University of Alaska's Institute for Social and Economic Research (ISER) measuring project impact.
- Evaluation to be prepared by July, 2011, using 12 month before and 12 month after electric bill data.

Project Payback

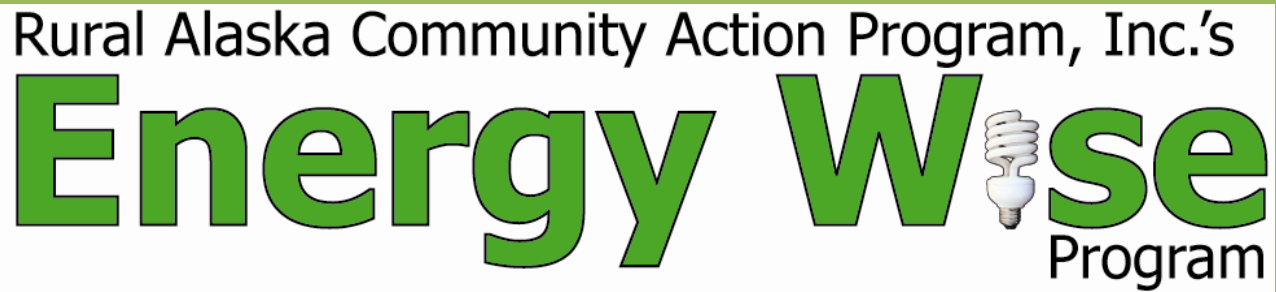
- Total cost including staff, training, travel, supplies, and shipping averaged about \$1,000/home.
- Using *just CFL replacement* estimates, the project will pay for itself in residential energy savings 7.5 years.

Feedback from Residents

- Reported reduction in electric bills by \$20-30/month, with many residents reporting bills dropping by half or more.
- Residents reporting that they were warmer the night after the visit, less wind and snow blowing through cracks in windows and doors.
- Practices changed with education

Economic Impact

- 85% of homes in community visited
- 160 workers locally hired and trained
- 90% retention rate over 6-12 weeks



Community Education

by Serena Demientieff

Energy Fairs



Save
Money
and Live
Better





Energy Fair Participants



Signing in for Energy Fair



Energy presentations

Kill-a-Watt Demonstration





st

Community Potluck



Involving Youth

Children's Activities

- Energy coloring contests
- Energy games
- School-based activities





Tour of Wind Turbines

- Wind Towers produces Kasigluk's electricity
- Built by Alaska Village Electric Cooperative
- 3 groups of 12 toured

Learning about Wind Power



Community Involvement

- Tribal Council
- City Council
- School
- Church Group
- AmeriCorps/VISTA
- Boys and Girls Club
- Parks and Recreation
- Youth Group



Energy Conservation Kits



Rural Alaska Community Action Program, Inc.'s
Energy Wise
 Program



RurAL CAP's Energy Wise Home Kit provides tools and resources to help you lower your energy costs, as well as better manage indoor air quality in the home. These energy efficiency tools, coupled with energy conservation measures, will help you use energy more efficiently and help you save money on your electric bill and heating costs.

Energy Efficiency



Window Film:
 Apply insulating window film during winter months to minimize drafts.



Refrigerator Thermometer:
 Keep this in your fridge to make sure the temperature is between 36 and 38 degrees.



14w CFL (5)



23 w CFL (1)

Compact Fluorescent Bulbs (CFL):
 Install CFL bulbs into fixtures that are most commonly used. CFLs are more efficient than regular incandescent bulbs. They last years longer while using less energy.

A Power Strip and Extension Cord:
 Use these tools to minimize phantom loads. When electronics are not in use, be sure to turn off the power strip so that electronics are not drawing power while they are turned off.



Indoor Air Quality

EPA Mold Booklet:
 This Guide provides information and guidance for homeowners and renters on how to clean up residential mold problems and how to prevent mold growth.



CO sensor:
 Use this sensor to detect carbon monoxide in the home.

Digital Hygrometers:
 Use this tool to measure the moisture in your home. Ideally it should read between 30% and 60%. Any higher than 60% and mold and mildew will begin to grow.



Other Tools Available

Contact your local Energy Wise Team for a demonstration on either of these tools, or to use them in your home yourself.

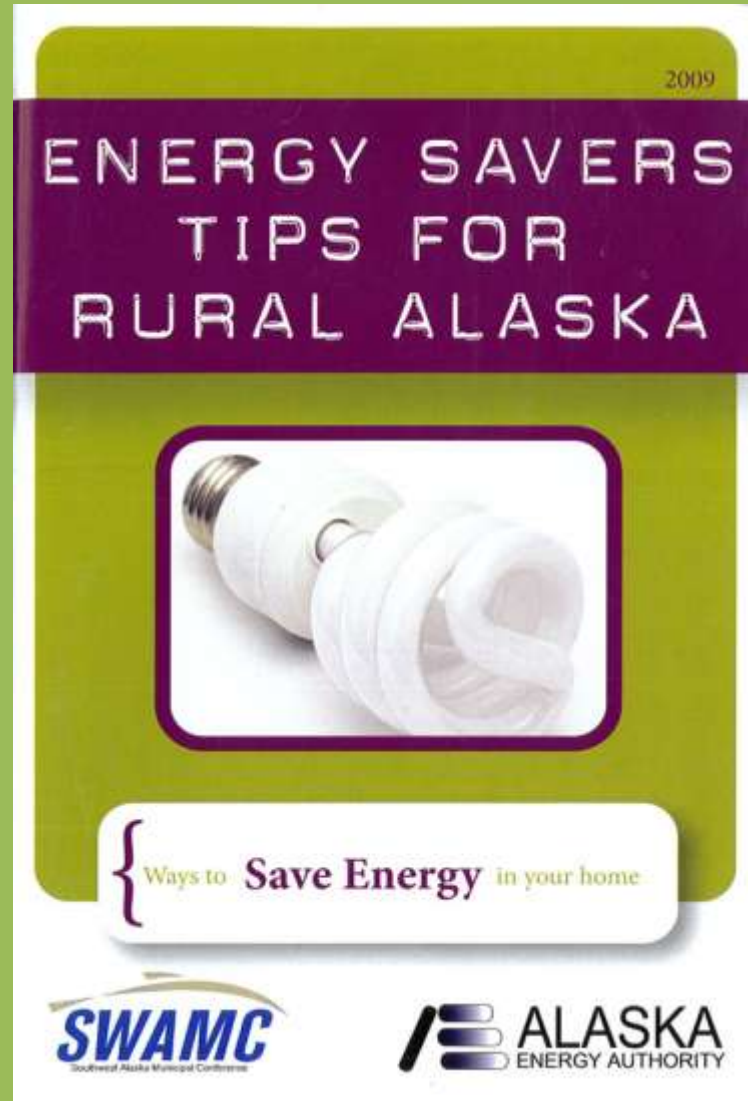


Kill-a-watt Meter:
 The Kill-a-Watt Meter is a tool that measures electricity usage of electronics and appliances. Use this to get an idea of how much energy your electronics and appliances use while they are on and off.

Refrigerator Coil Brush:
 This tool is used to remove dust and other particles that build up over time on the coils of your refrigerator. By cleaning these coils, refrigerators run more efficiently.



Energy Efficiency and Conservation Tips



Energy Fact Sheets

Phantom Load

CREATED BY YOUR STUDENT
SUSTAINABILITY EDUCATION
COORDINATORS
CAL_SSEC@YAROO.COM
RECYCLE.RECYCLE.YOO@SSEC

LINKS

www.energys.gov/
www.energychallenge.org/tips
<http://www.eia.doe.gov/>
<http://www.energystar.gov/>
<http://www.energys.gov/>
<http://www.eia.doe.gov/>
<http://www.energys.gov/>
www.consumer.gov/energy

WHAT'S THE BIG DEAL?

Chances are, you've never heard of the term "phantom load." What is it and how does it affect you?

In a nutshell, the phantom load is the electricity consumed by a device when it is turned off. For example, your television consumes electricity as it waits for you to hit the "on" button on your remote. The clock on your uses up energy 24/7 to keep track of time. Devices that have a phantom load are sometimes called "vampires." These devices have a hidden energy cost that most people are never even aware of.

Nationally, phantom loads make up about six percent of our energy

consumption. This translates into billions of dollars spent and countless amounts of pollution emitted into our air. Obviously, phantom loads are a huge problem, especially as energy costs rise and our fossil fuel reserves near depletion.



SOME QUICK FACTS:

- Nationally, phantom loads make up about six percent of our entire residential electricity consumption.
- A decrease of only 1% in industrial energy use would save the equivalent of about 30 million barrels of oil per year, worth about \$1 billion.
- If all phantom loads were eliminated, California would not have faced rising fuel costs.
- Number of cars necessary to produce the amount of energy-generating pollution that comes from U.S. coal power plants each year: 37,000,000.
- One study estimated that the phantom load from TVs alone was equal to the output of a Chernobyl coal power plant.
- Though accounting for only 1% percent of the world's population, Americans consume 28 percent of the world's energy.
- Worldwide, some 2 billion people are currently without electricity.

HOW CAN I HELP?

- Unplug all devices when not in use.
- Alternatively, plug your devices into a power strip and turn the strip off when you go to sleep.
- Buy Energy Star® appliances to reduce your phantom load for de-

- vices that would be impractical to turn off.
- Tell others about this phenomenon known as phantom load. Chances are, they've never heard of it either!
- Watch out for cube shaped transformers that plug into the wall. These transformers are 50-80% inefficient when plugged in, so it is especially important that these are on power strips.
- Lead by example. If you start turning off your devices, maybe your roommates or family will too.



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UNIVERSITY OF MINNESOTA
EXTENSION

ENVIRONMENTAL EDUCATION
Carbon Monoxide - Your Safe Home
Wanda Olson, Fau-Mori, Revised by Kathleen Nurlan

ENVIRONMENTAL EDUCATION

www.extension.umn.edu

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What is carbon monoxide?

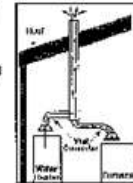
Carbon monoxide, often called CO, is a poisonous gas. You cannot see, smell, or taste it. Carbon monoxide poisoning can happen when you have a large amount of this gas in the air in your home at any time, or smaller amounts of the gas in the air for several days. Carbon monoxide is produced when fuels like gas, oil, kerosene, wood, charcoal, or coal burn.

What does carbon monoxide poisoning do to our bodies?

Carbon monoxide poisoning can make you headache, dizzy, tired, or sick to your stomach. If you and your family feel this way in your home, and then get better when you leave your home, and then get the same sick feelings back when you return home, you may have carbon monoxide poisoning. **Carbon Monoxide Can Kill You.**

How do I keep carbon monoxide from getting into my home?

Carbon monoxide can get in your home when fuels are burned to heat your home, to heat water, or when cooking. Your heating equipment should vent (send) this gas outside of your house. So-called "chimneys don't work well and fire burning gases get into your house. Carbon monoxide in car exhaust may leak into your home from an attached garage.



As it the heat mixes with the burning gases and goes up the chimney. All air should flow up the chimney, not down. With your furnace or water heater is cooling, the vent can color should be very hot to the touch.

Who is at risk for carbon monoxide poisoning?

Everyone can be poisoned by breathing in too much carbon monoxide. Everyone but the gas is especially dangerous for pregnant women and their unborn babies, infants, children, elderly people, and people who have anemia or some heart and lung health problems.

How can I find out if my home has too much carbon monoxide in it?

Health professionals and heating equipment experts recommend that you have a trained person check your heating equipment. You can install a carbon monoxide detector with an alarm in your home.



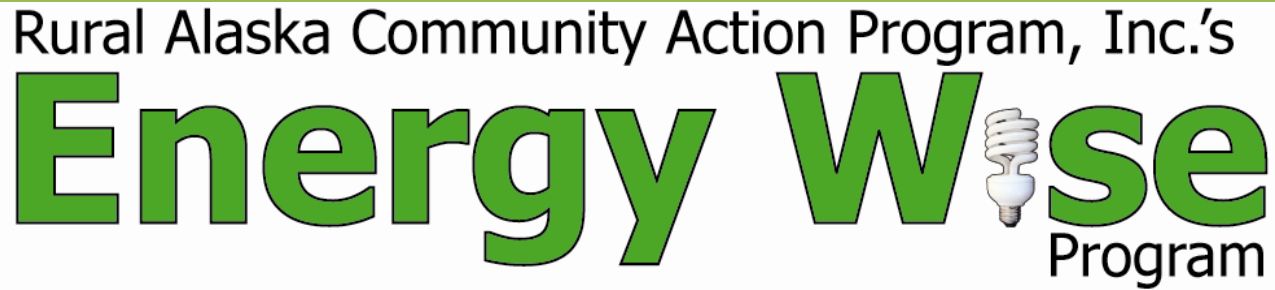
Install this detector near bedrooms so that the detector's alarm will wake your family if too much carbon monoxide is in the air. Detectors can vary in cost from about \$30 to \$40. You can buy them at hardware and discount stores.

What do I do if the alarm on my detector rings?

Get the family outside and call 911. This is very important: if anyone in your family feels sick



Energy Wise Crew
Kasigluk



Energy Wise Crews in Akiak, Alaska

by Jamey Gilila



Akiak

Crew Chief: Jamey Gilila

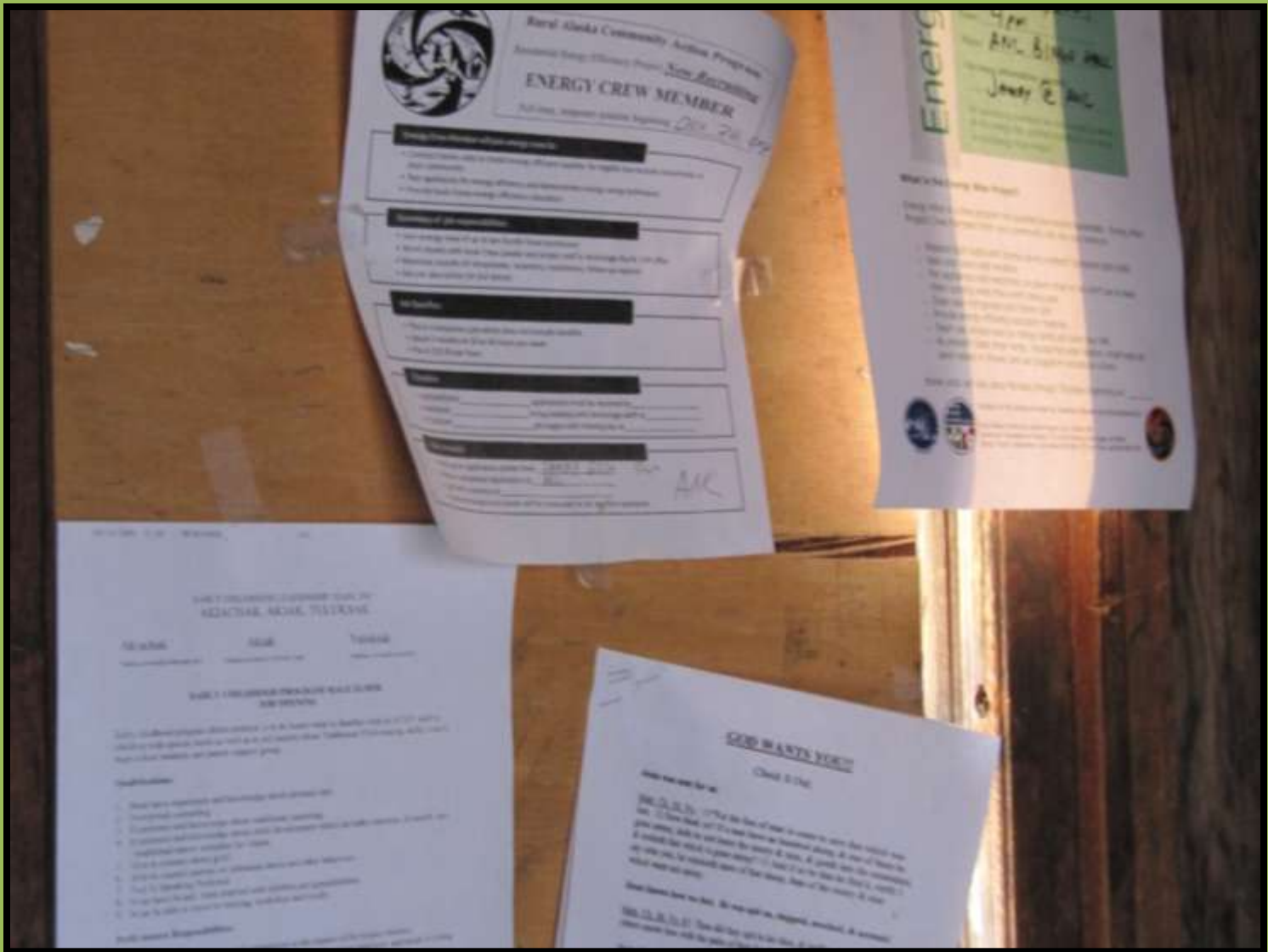


Freight arrived



Organized storage

Crew Member Recruitment and Training



Local Recruitment of Crew



Wise Men of Akiak Crew



Crew getting tools



Kill-a-watt learning



Teaching



Learning to do the math



Kill-a-watt meter lesson

85 Home Visits in Akiak

Packing up Supplies





Home Visits



Home Surveys



Showing how to save money



Reviewing energy bills



Kill a Watt Demonstration



Meter reading- for project evaluation



Replacing Incandescent with CFL bulbs



Sealing doors, installing door sweeps and door jams



Filming windows – Shrink Wrap



Serena showing us that it is better now



Cleaning refrigerator coils



Cleaning freezer coils



Placing insulation pads behind light switch plates and electrical outlets



Wrapping hot water heater



Installing low-flow shower-head



Mounting carbon monoxide monitor



Making a difference

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