

Bering Strait Region Energy Projects

By Walter H Rose

Kawerak Energy Specialist

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Energy Efficiency & Conservation Block Grant (EECBG)

- ▶ Conservation: Changes in behavior eliminating energy waste “Not using it”
- ▶ Efficiency: Getting the same amount done using less energy. Being more efficient.
- ▶ EECBG Activities
 - Benefit the entire community
 - Create Sustainable Jobs
 - Are replicable
 - Reduce carbon footprint
 - Reduce fossil fuel dependence

In the Bering Strait Region

- ▶ All of our Villages submitted applications
- ▶ Many interesting projects.
 - Three chose AVEC “smart meter program”
 - Other projects include
 - Energy audits as a precursor to efficiency retrofits.
 - Energy efficient lighting
 - Energy–star appliance retrofit
 - Wood fired boiler for community building
 - Joint project, met–tower between two villages.

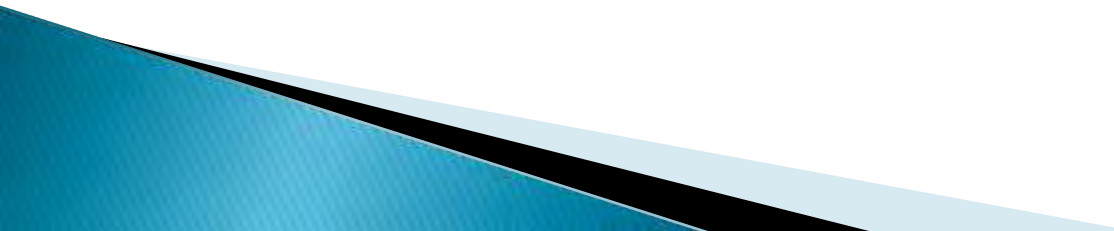
Some have been completed

- ▶ Teller
 - - energy-star appliance retrofit.
- ▶ Some are underway
 - Diomedea weatherization retrofits & repairs
 - Doors, windows, weatherization
 - Stebbins, “boiler in a box”
- ▶ Some have yet to get started
 - Golovin/White Mountain met-tower
 - Elim, energy audits & retrofits
 - Council, energy efficient lighting

Lets look at some Projects

- ▶ **Teller - energy-star appliance retrofit**
 - Used Kill-a-watt meter to measure old units
 - Performed retrofit... replaced old appliances
 - Twenty seven - 27 - refrigerators & freezers replaced
 - Used meter to measure new consumption
 - Results
 - Energy savings of more than 11,000 kWh / year
 - Average 408 kWh / appliance

What did we learn from Teller

- ▶ Sometimes investing in efficiency pays off.
 - It might put money back in peoples pockets
 - The same work is done using less energy
 - ▶ Efforts to identify “big wasters” early in project helps maximize returns.
 - ▶ Baseline EnergyStar data would be valuable.
 - ▶ DOE in Denver suggested funding opportunities for efficiency and conservation might be announced soon.
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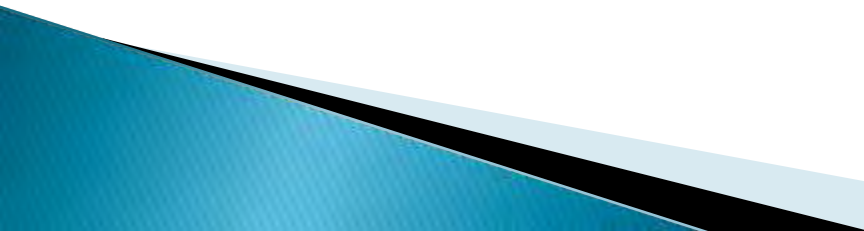
Stebbins, “Boiler in a Box”

- ▶ Wood space heating for community building.
- ▶ Utilize abundant Yukon River driftwood for fuel.
 - Problems:
 - Boilers not guaranteed for salty wood
 - Nowhere to house the boiler
 - Innovations:
 - Installed complete system in a 20’ container
 - Garn agreed to partner in a project to prove their machine can burn salt–water soaked driftwood and survive.
- ▶ This could turn out to be a good project
 - It might create jobs in Stebbins for the life of the boiler.
 - It is easily replicated
 - Substantial costs were avoided by putting it in a “box”

Golovin / White Mountain Wind

- ▶ Install a met-tower on hill between villages
- ▶ Example of coordinated energy planning
 - Formed a joint wind energy steering committee
 - Representation from City, Native Corporation, and IRA Council from both villages
 - Conducted a survey
 - White Mountain 40% of adults completed survey
 - Golovin 38% of adults completed survey
 - Firmly established wind project is a priority
 - Included in Local Economic Development Plan
 - Funding agencies want community-wide benefits

The entire benefit package


- ▶ Financial analysis depends on price of fuel
 - ▶ Financial benefits accrue over many years
 - ▶ Security perspective – fossil fuel dependence is risky, not sustainable, and a major threat
 - Vulnerable to supply disruption and volatile prices
 - Vulnerable to environmental catastrophe.
 - Post 2008 40%–60% of per-capita income on energy
 - ▶ Local & renewable energy = countermeasure
 - Non-financial benefits are substantial.
 - ▶ Economic environmental, & energy security
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Today and Tomorrow

▶ Today

- Systems are very expensive compared to lower 48
- They break down in the cold climate
- Few know how to operate, maintain and repair
- We're not sure how well they're going to perform

▶ Moving along the learning curve... Tomorrow

- We will continue trying to drive costs down
 - We will continue trying to increase reliability
 - Performance should increase & become predictable
 - Local workforce should develop skills & abilities
 - As this happens renewable energy looks better
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These things might help!

- ▶ Planning at community and regional scale
 - An energy champion in every village
 - Joint energy steering committees
 - ▶ Education, training, workforce development
 - ▶ Resource assessments, wind, wood, solar, ocean current, geothermal
 - ▶ Shovel-ready projects backed by community
 - ▶ A sustained commitment that does not depend on the price of fossil fuel.
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