

Wednesday, October 21, 2009

Kawerak Management:

The House Energy Committee, Senate Resources / Energy Committees and the Bush Caucus are holding a hearing on AFN's main stage on Friday, October 23, from 2 to 5 PM.

The subject of the hearing is "Rural Alaska Energy Concerns." They have decided to invite testimony from each of the 12 ANCSA regions and have allotted the first two hours to invited testimony (committee members might have questions after your presentation). They are hoping to hold each region to approximately 10 min.

Below please find my input on the three questions they would like answered which I hope you will find of assistance in preparing your presentation:

A) What kind of unique energy problems exist in our area of the state?

• **SKILLS AND ABILITIES**

- Skills and abilities necessary to operate and maintain electrical generation equipment and renewable energy assets not present.
- Renewable energy projects currently at too small a scale to justify hiring a full time employee. (Banner is a notable exception)

• **ACCESS**

- Renewable energy resources are not readily accessible via existing road system. Promising resource development projects can be rendered financially impractical by anticipated transmission line and road construction costs (Pilgrim - problem with transmission line cost).
- Heavy equipment necessary to construct larger more efficient wind turbines is not available in the region.
- None of the Villages are connected to the State utility grid.
- Fuel can only be delivered in bulk by barge during summer months. Each village must store enough to last the winter.

- EROSION: A number of Villages are threatened by erosion, in Golovin, a non-AVEC Village, flooding has shut the power plant down a number of times.
- TUNDRA HEAVE: Unstable ground makes building reliable foundations for wind turbines much more costly and challenging than in other regions.
- HARSH CLIMATE: Technologies considered "proven" in milder climates often fail in this region; there is a steep learning curve associated with new technologies.

B) What local solutions have been attempted and what are the results;

The Alaska Renewable Energy Fund administered by the Alaska Energy Authority has, to date, provided \$11.4 million in funding for renewable energy projects in our region.

This summer AVEC installed:

- Six (6) one hundred (100) kilowatt wind turbines in Unalakleet.
- Three (3) one hundred (100) kilowatt turbines in Gambell.

This summer AVEC initiated wind studies in:

- Stebbins
- Teller

Last summer AVEC installed:

- Two (2) one hundred (100) kilowatt turbines in Savoonga. One of the turbines experienced some down during last winter; both are back in operation now.

Last summer BSNC and Sitnasauk installed:

- eighteen (18) fifty (50) kilowatt turbines on top of Banner Peak in Nome. The wind farm was shut down all summer due to technical problems but should be coming back on line shortly.

SIDE NOTE: If you mention Banner everybody is going to want to know exactly what went wrong. The way it was explained to me last:

- The device the wind farm uses to measure the wind speed froze up and started spinning much more slowly than it should have (registering a wind much slower than it actually was). The

turbines, which should have shut down automatically when the wind reached a certain speed, kept operating; this put a lot of wear and tear on the gearboxes. Additionally, the air in Nome turned out to be much heavier (denser) than expected. The angle (pitch) of the propellers (rotors) was set wrong and they were spinning too fast; they are fixing both these things.

- They have been up on the hill with parts, equipment, and good help for nearly a month now; while I'm not directly involved, the feeling I get is that we'll see the wind farm producing electricity shortly.

REGIONAL ENERGY SPECIALIST

Kawerak hired a regional energy specialist in Mid-March 2009 to assist Native Villages with energy related issues.

REGIONAL MEETINGS FOCUSING ON ENERGY

Representatives from the IRA Councils of more than two thirds of the Villages in the region recently met in Nome and reached a consensus regarding renewable energy priorities for the region:

- 1) Research, Education, and Planning - in order to gain a good understanding of emerging technologies, to address the need for local energy related skills and abilities, and to efficiently arrive at an optimal solution.
- 2) "Multipower" Energy Resources - Multipower is defined as any technology which tends to offset but not completely replace diesel generated electricity including wind, solar, and tidal.
- 3) Regional Geothermal Cooperation & development - two areas of our region, the Pilgraim/Mary's Igloo/ Teller area and the Elim/ Koyuk/White Mountain/Golovin area both need further geothermal investigation.

A separate survey of energy priorities at the village level reveals that both Wind/Diesel hybrid system development and Continued Weatherization are equally high priorities. While solar heating technology, better wood stoves, and more efficient wood gathering and chopping techniques were of considerably lesser interest.

C) What do we think the State of Alaska should be doing to help with the high cost of energy?

- Encouraging and enabling the sustainable, fiscally and environmentally responsible development of local and renewable energy resources is the most sensible long run strategy because:
 - o It promises to permanently reduce the size of PCE and other energy related transfer payments by reducing rural energy costs.
 - o It is consistent with this region's values of self sufficiency and independence.
- So far we have mostly gone after electricity. I recommend they tailor incentives including the PCE to encourage high penetration renewable projects (projects that produce more electricity than the village needs) and use the extra electricity to reduce heating fuel requirements (like Toksook Bay).

WALT'S STATISTICS:

- According to the Alaska Energy Authority, as of March 23, 2009, the weighted average cost per kilowatt hour of electricity in the Bering Strait Region was forty two cents per kilowatt hour (\$0.42/kWh); the second highest of any region in Alaska.

[REDACTED]

NOTE: The above figures are for full time (not seasonal) residents (registered PFD recipients) who are not self employed or working for the federal government or military.

NOTE: I used 2008 wage totals from labor.alaska.gov, DCCED 2008 Certified Municipal Populations data for FY 10 Programs, and energy expenses information from the Alaska Energy Authority's Wednesday, January 14, 2009 village by village survey pages 121 to 188 to arrive at the above figures. I am entirely confident they are not overstated. (I have actually understated them because I find them so hard to believe)

If you have any questions or require any clarifications I am at your disposal.

