Larry LaBolle

From: Don Eller <nalaska@yukontel.com>
Sent: Friday, March 02, 2012 9:35 AM
To: Paul Labolle; Larry LaBolle
Subject: HB 357
Attachments: RE: AEA and rural power; RE: AEA expenditure information; Renewable energy fund 2010.xlsx

Rep. Neil Foster Office,

My family has been providing electric and communications service is rural Alaska since 1960. My premise is simple, AEA's self proclaimed mission statement is to "reduce the cost of energy in Alaska", given this mission statement all AEA programs should in fact lower the cost of energy in Alaska. Evidence available from the AEA web site of the performance of AEA programs including the Aidea Sustainable Energy Program clearly shows that AEA and AEA programs are not lowering energy costs. In fact it can be easily argued that AEA is part of the problem, acting as an enabler and keeping rural energy costs high through their actions. I have provided a spreadsheet analysis of the renewable energy program pay back based on the information AEA makes available. Notice nowhere in the AEA performance information does AEA actually do an analysis of how the projects lower energy costs, the mission of the AEA.

In looking at the performance of the AEA funded projects you will find that two projects, the Kodiak wind farm and the Gustavus Hydro, skew the numbers. If a infrastructure project has a pay back of two years it can easily be financed externally and does not really need grant money for funding. If you look at the majority of the rest of the projects you see a 35 to 109 year pay back, are these projects actually accomplishing the mission of reducing the cost of energy in Alaska? The answer is NO. So why is the state wasting limited resources by giving them to an agency that does not use them efficiently or prudently?

AEA and their entire way of operating needs to be redone making the focus to reduce the cost of energy in Alaska with accountability to make sure this goal is accomplished otherwise the state is just wasting money.

Sincerely,

Don

Don Eller
Yukon Tech. Inc.
6270 Beechcraft Rd.
Wasilla, Alaska 99654

907 745-5363

Larry LaBolle

From: Don Eller <nalaska@yukontel.com>
Sent: Monday, August 29, 2011 11:49 AM
To: 'Sara Fisher-Goad'
Cc: governor@alaska.gov
Subject: RE: AEA and rural power
Attachments: rubyelec.pdf; ruby elec rate increase.pdf; AK_Energy_Model_Tanana.pdf; Summary_Project_Evaluation_R2_Tananarejection.pdf

Ms. Fisher-Goad,

I have included previous emails to help refresh your memory and help you see from an outsiders perspective that AEA is not lowering the cost of energy in Alaska nor is it promoting sustainable rural energy systems. AEA is part of the problem providing resources to rural power systems which do not maintain their facilities and penalizing companies and communities where their electrical infrastructure is properly maintained and managed.

Let us examine the facts at face value, AEA has provided the community run electrical system of Ruby with multiple generators, buildings and an electrical grid multiple times based on need over the course of many years. The community of Ruby will be raising their electrical rate to $1.13/kwh, yet Tanana who has not received any AEA assistance for their electrical system, power rate remains at $0.5693/kwh for the highest rate class. So a company without AEA assistance Tanana is able to produce electricity for half of the cost of a company with AEA assistance. AEA is an enabler, rewarding a companies who do not maintain or invest in their facilities by providing them with new infrastructure and penalizing customers like those in Tanana with a properly maintained and managed electric company. The customers in Tanana pay for the full cost of power because they have an electrical system that is properly maintained and managed yet companies that live on State assistance, like Ruby, are rewarded with new infrastructure for allowing their infrastructure which was previously installed to go into disrepair. What is fair or equitable about that? What is AEA doing to ensure that the State's investment is protected in these communities like Ruby where the state has built infrastructure multiple times to ensure that the system is sustainable and the state will not be requested to build the system again in a couple of years? AEA is part of the rural Alaska Energy problem.

AEA and its staff have a very limited understanding rural Alaska. AEA staff people as shown by the following are very removed and do not understand Alaska. Let's look at specifics:

1) AEA defining Tanana as a Class 7 wind zone (AK_Energy_Model_Tanana) and then denying multiple requests for funding on projects (Summary_Project_Evaluation_R2_Tananarejection) which will lower the cost of electricity in Tanana because the projects do not follow the centralized beaurcratic top down planning process dictated by AEA. AEA then later comes out and states that, "Tanana does not have economically viable wind resources." This is after rejecting multiple requests because they did not pursue wind, a resource which is not economically developable in the area, which I have told AEA multiple times and have been ignored. So because AEA messed up and does not know what they are talking about, the residents of Tanana are penalized being denied funding. Not exactly fair or a demonstration of the competency of AEA.
2) AEA has insisted on pursuing the Susitna Hydro project, a project that will cost somewhere in the neighborhood of $5 billion dollars and will displace electricity costing about $0.15/kwh. Jackson Creek hydro development which has already received a sterling endorsement from AEA's predecessor would cost in the neighborhood of $5 million and displace electricity costing $0.56/kwh but is discouraged by AEA. Let's examine AEA's objections: a) environmental issues associated with licensing a dam are very significant today. b) Building a dam on permafrost is a significant challenge from an engineering perspective. c) Thermal issues associated with hydro projects restrict their development and lands North of there. Talk about removed from reality. AEA is willing to pursue the development of Susitna for $5 Billion dollars with all of the same issues and objections associated

with Jackson Creek which would cost $5 million dollars, but is unwilling to pursue Jackson Creek development. AEA is very removed and disconnected from reality, let's look at the objection to Jackson Creek development: a) Licensing, because of the size and the fact that the area to be developed is on Native land, Jackson Creek hydro is exempt from most of the licensing requirements. b) Mr. Ott's statement regarding building a dam on permafrost is correct, there are issues with building on permafrost, this however does have any effect on the Jackson Creek project since it does not set on permafrost. Any engineer working in Alaska with any competence should know that Southern facing steep well drained slopes such as Jackson Creek, typically do not have permafrost issues. c) Thermal issues such as frazil ice are very real engineering concerns in Northern climates, however it is an issue with the Susitina project just as it would be with Jackson Creek. There are hundreds of traditional hydro electric projects above the Arctic Circle, just look at Norway. So while "thermal issues" are real concerns in Northern climates it is not a show stopper, there are a lot of examples of hydro electric systems operating above the Arctic Circle without problems.

3) AEA pursuit of biomass is a good idea at face value but really needs some on the ground study which has not been done before it is pursued. As a result of the biomass project at the Tanana laundrymat residents of Tanana have already seen an increase in the cost of wood for heat. The installation of three more systems in the community will only put a greater demand on the resource causing wood for residential heating to go up in price and become less plentiful. We already have an example of the use of biomass in Tanana from the 1900s. Jetté (1910) records the Koyukon Athabascan name for the village as Hohudodetlaatl Denh, literally, 'where the area has been chopped" The forest around Tanana is still recovering from the days of Fort Gibbon, local trees in the Tanana area are typically at most 6-8" in diameter, it has taken almost 100 years for the trees to get this big. So for AEA to aid in the development of biomass development without a though long term study of the implications, is irresponsible.
4) Tanana Power has actually developed a kinetic hydro energy conversion device that works. The device in one summer season has produced and put more electrical energy on the grid than all the other devices in Alaska combined throughout their entire existence. AEA has failed even to provide even minor assistance to Tanana Power for this project, instead spends money pursuing things like nuclear energy for rural applications a non starter at face value.

My goal is not to bash AEA, however, AEA has provided multiple examples of incompetence within the organization and the rewarding of incompetence through the organization. Given that this is unfair to my customers and the state as a whole I see no other alternative but to take this fight to the legislature but am providing AEA one last chance to explain themselves before doing so. I look forward to your thoughtful response.

Sincerely,

Don Eller

From: Sara Fisher-Goad [mailto:SFisherGoad@aidea.org]
Sent: Monday, March 21, 2011 1:15 PM
To: nalaska@yukontel.com
Cc: Mike Harper; David Lockard; Douglas Ott; Barbara Triplett; Ronald Brown; Shauna Howell; Peter Crimp
Subject: RE: AEA and rural power

Dear Mr. Eller-
Thank you for your e-mail. I appreciate hearing from people as familiar as you are with rural Alaskan energy issues. Be assured, AEA project staff have in-depth rural Alaska experience. Our engineering staff includes people born in Alakanuk and McGrath. We also have employees who have worked for a decade or more in Kotzebue, the Lake Iliamna region, and Barrow. In my experience, AEA employees have gained their knowledge of rural Alaska with hands-on years of experience, not one or two-day trips in a community.

AEA has energy programs and projects that run the gamut from energy efficiency to bulk fuel tank farm construction, from PCE to the study of advanced small nuclear reactors, and from loans for rural bulk fuel purchases to investigating hydropower potential on the Susitna River. AEA's website www.akenergyauthority.org provides a great deal of information regarding how AEA allocates its resources to lower the cost of energy in Alaska. The "Program and Project Fact Sheets" link on our web page provides specific information on various AEA programs. I also invite you to come to our offices and meet with me and Mike Harper, Deputy Director - Rural Energy to discuss your concerns about AEA programs.

I do want to address a couple of specifics from your email:

Your points regarding the value of nuclear power in Alaska are valuable, and I have shared them with the authors of that study. AEA was appropriated funds last year to partner with ACEP to develop a feasibility study of potential nuclear power in Alaska. The summary you referenced is draft only and several of your comments and concerns are shared by AEA staff. Last year, legislation also passed allowing the state to consider nuclear power projects as potential energy projects in Alaska. As a key agency for energy project planning and financing, AEA supports analyzing all energy technologies. Since the Nuclear Regulatory Commission has not approved a small modular nuclear reactor design, this technology's potential use in Alaska is many years away.

The biomass resource is a critical concern when AEA considers wood boiler projects. Our grant process requires a resource assessment as an early part of project development. In Tanana, AEA staff met recently with Tanana Chiefs Resource Specialist Will Putnam and State Forester Doug Hanson to plan for these projects. If you would like to be added to the stakeholder list for that process, please contact Ron Brown, AEA biomass project manager (rbrown@aidea.org).

Your comments on the wind resource around Tanana are in agreement with recent wind data AEA has gathered using a high resolution wind model. With only a class 2 wind resource, Tanana does not appear to be a promising site for wind development.

Unfortunately, it appears the hydro resource near Tanana is not conducive to development either. Mr. Douglas Ott is AEA's hydropower program manager. (no relation to Ron Ott, principal of the former Ott Water Engineers, whose firm prepared the 1978 hydropower reconnaissance report on Jackson Creek.) Mr. Ott has prepared the following summary of the hydro prospects for Jackson Creek :

> *The creek is seasonally intermittent and located in a flat valley with steep hillsides. The scheme studied in 1978 report included a dam and reservoir on Jackson Creek and a 5 mile long penstock to a 850kW powerhouse. Regulations and licensing requirements for hydropower projects have become much more stringent since 1978. Environmental issues associated with licensing a dam are very significant today.*
>
> *Building a dam and creating a reservoir on permafrost is a significant challenge from an engineering perspective. Further, a 5 mile long penstock is beyond the range of that considered economic for intermittent hydro operation. Lastly, thermal issues associated with hydro projects restrict their development in the Interior and lands north of there. For all these reasons, AEA does not recommend further consideration of hydro development on Jackson Creek.*

The Yukon River at Ruby was the site of the first hydrokinetic demonstration in Alaska. However, this technology is several years from commercialization, would only provide seasonal power, and has significant technological and environmental hurdles to cross. I understand that you have invested significant resources into a prototype hydrokinetic device. Ms. Barbara Triplett, AEA's ocean and river energy program manager, can add you to AEA's hydrokinetic working group list if you are interested (btriplett@aidea.org).

I understand you have worked with a number of AEA program managers to gather information regarding wind, geothermal, river in-stream and hydropower; the City of Tanana has also received a grant from AEA for a street lighting retrofit to LED lamps.

I applaud your efforts to pursue alternative energy sources for Tanana. I agree, rural residents know best what their needs are and how to meet them; please consider AEA a resource to help you in your efforts.

Sincerely,

Sara Fisher-Goad

AEA Executive Director

From: Don Eller [nalaska@yukontel.com]
Sent: Wednesday, March 16, 2011 1:23 PM
To: Sara Fisher-Goad
Subject: AEA and rural power

Hi Ms. Fisher-Goad,

Congratulations on being hired as executive director of AEA.

I have serious concerns as to AEA role allocating and directing resources and providing assistance to rural power producers. Is there any information available as to the resources allocated by AEA, the assistance provided by AEA and the impact of the resources lowering the cost of electricity/energy?

In my experience with AEA there seems to be a chasm between the what is practical and beneficial for developing cost effective energy resources in rural Alaska and what AEA and AEA's program managers think should be pursued for energy resources in rural Alaska. I believe this is caused by the lack of understanding of AEA project managers of rural Alaska because of the lack of exposure to rural Alaska. It is impossible to understand the community dynamics and what are practical resources to develop by a one or two day trip into a community, it take years to gain this understanding. Case in point the latest report on nuclear energy for rural Alaska. http://www.uaf.edu/files/acep/Executive-Summary-3-2-11..pdf This is not brought up in context of the recent tragic events in Japan but in the context of practicality and applicability of the technology for Alaska. If we just look at energy demand in Alaska it is easily seen that even small nuclear facilities, 100 MW and below do not match well with community demand except for the railbelt. Even the micro reactor that was slated for Galena, a 10 MW facility, does not match well with the electrical demand except 1 or 2 Alaskan communities. Yet limited energy resource dollars are directed at a specific group of academics for the "study" which produces nothing of benefit to the state as a whole. The funds could have gone to actually helping lower energy costs in Alaska, the mission of AEA.

Another example of the disconnect between AEA and the people it is suppose to serve is the Alaska Energy model. The results of the model for Tanana are attached. The model shows Tanana being in a class 7 wind zone, yet every wind study done on wind in and around Tanana shows the area to be a class 2 wind zone at best. Again I refer you to another document from AEA community database from the Alaska Energy Plan 2010. The information paints an unrealistic view of the wind energy resources in Tanana stating that there is a class 3 wind zone on top of Mission Hill. No one, self included, has monitored the wind resources the wind resources on top of Mission Hill for a very good reason: Mission Hill is one of 7 mountains of importance according to the Athabascan religion and culture, the local population is very against the development of anything on Mission Hill. The AEA statement that Mission Hill is a class 3 is based on nothing more than a computer model which I have found to be consistently wrong. This goes hand in hand with the push for biomass as an energy resource and the lack of understanding of the resource. Tanana has used biomass as an energy resource almost exclusively in the 1900s during the days of Fort Gibbon and the steam paddle wheeler. The resource was used to such and extent that there is no old growth in and around the community of Tanana. Yet the energy is

pushed as a solution by AEA without understand the facts as to the actual sustainability of the resource in the environment. It is 100 years after the resource was used in the area but the forest still has not recovered. What longterm studies have be done on the sustainability of biomass.

There are real and practical solutions for rural power, traditional hydro-electric is one such solution but is immediately discounted by AEA as are coal fired boilers. Attached is the Jackson Creek hydro study and the recommendation to AEA that the best energy alternatives for Tanana is the development of Jackson Creek Hydro. Yet anytime suggestions are made to AEA to develop the hydro resources around Tanana, AEA immediately discounts them pushing for much higher cost energy fads of the day like wind and biomass development. It is interesting to note that much of the early work on hydro in Alaska was done by Mr. Ott. Douglas Ott is also the project manager for traditional hydro projects at AEA. I am unsure if they are the same person but if they are the change in attitude from when Mr. Ott was a consultant making money of rural hydro development and now that he is a program manager for AEA amounts to an about face.

It is always easy to tear down and criticize others actions, this is communication with you is not meant to do that. This communication is an attempt to bring about structural changes of the way the State of Alaska handles rural energy by demonstrating the problem areas and providing logical alternatives the state has proposed in the past. I understand your job is dealing with energy throughout the state of Alaska so the specifics of Tanana are not on the top of your priority list.. Affordable energy in Tanana however is my priority and having been born and raised in Tanana and worked there throughout my life, no one knows more about what is the best energy resource for Tanana, than me. Unfortunately I cannot get those who have control of the purse strings to listen.

As always you and anyone at AEA staff are welcome in Tanana any time to review and inspect what an efficient power generation system installed in rural Alaska with private dollars should look like.

Don

Don Eller
Yukon Tech. Inc.
6270 Beechcraft Rd.
Wasilla, Alaska 99654

907 745-5363

!DSPAM:16,4d87c05a40044646080157!

Ruby Electric
P.O BOX 90
Ruby, Alaska 99768
PH# (907)468-4401
FAX# (907)468-4443

June 30, 2010

Ruby Electric Customer:

Due to the increase in fuel costs we had to increase the KW charge from .76 to .84. This will be effective on the next billing cycle, next month.

Reminder, at the conclusion of the next month we will have our first $100.00 drawing for current electrical customers. I have hi-lited overdue amounts due that will need to be paid in addition any amounts in your 1-30 will need to be paid so it does not move over to 31-60 days . Any current residential customers (no balances in 31-60 or over) with no overdue city charges will be eligible.

Sincerely,

Jennie Peter

Jennie Peter
City Clerk

RUBY ELECTRIC CO.
P.O BOX 90
Ruby, Alaska 99768
PH# (907)468-4401
FAX# (907)468-4443

RECEIVED AUG 1 1 2011

July 31, 2011

Ruby Electric Customers:

In receiving our fuel this summer there was a substantial price increase on the price of fuel that directly effects our KW rate. With our fuel increase it would generate an increase of KW rate to $1.13.

The City Council has decided to wait until the fall fuel shipment is delivered to make any adjustments to the KW rate. We are in hopes the cost will be less so that our increase will not be so high. Therefore, at this time there will be no increase.

Unfortunately, there will have to be an increase to the KW rate this fall based on the price of fuel however the rate is unknown at this time.

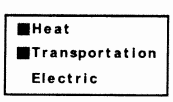
This letter however will serve as notice to our customers notifying you of the rate increase.

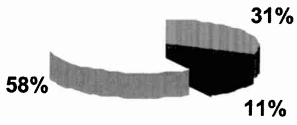
Thank you,

Jennie Peter
City Clerk

Tanana

Energy Used





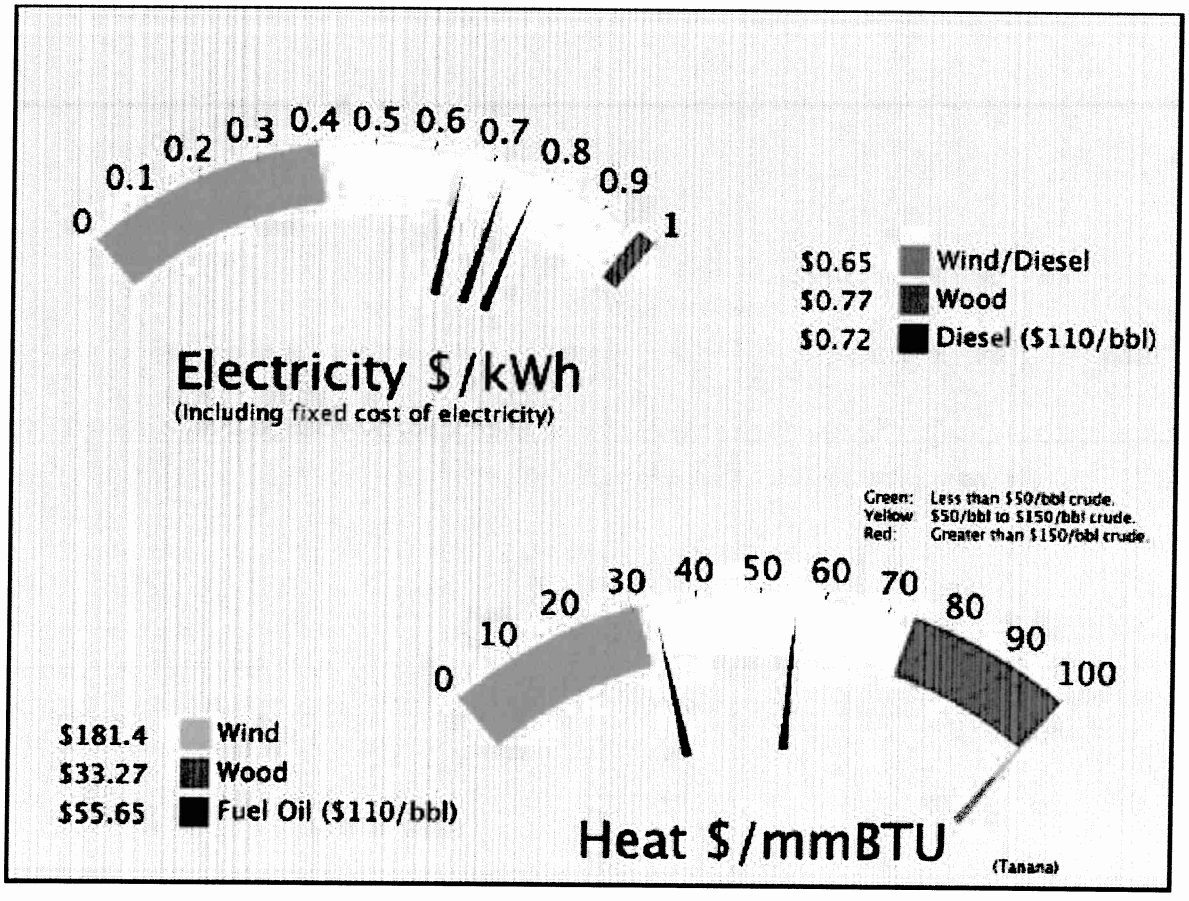
Total: **$5,309** Per capita

Heat **$1,632** Per capita

Transportation **$590** Per capita

Electricity: **$3,087** Per capita

POPULATION: 258



Tanana

Regional Corporation
Doyon, Limited

House 6
Senate : **C**

POPULATION 258 LATITUDE: 65d 10m N LONGITUDE: 152d 04m **Unorganized**

LOCATION Tanana is located in Interior Alaska about two miles west of the junction of the Tanana and Yukon Rivers, 130 air miles west of Fairbanks.

ECONOMY Two-thirds of the full-time jobs in Tanana are with the city, school district or native council. There are a number of positions with local businesses and services. BLM firefighting, trapping, construction work and commercial fishing are important seasonal cash sources. 17 residents hold commercial fishing permits. Subsistence foods include salmon, whitefish, moose, bear, ptarmigan, waterfowl and berries.

HISTORY Due to its location at the confluence of the Tanana and Yukon Rivers, Tanana was a traditional trading settlement for Koyukon and Tanana Athabascans long before European contact. In 1880, Harper's Station, an Alaska Commercial Company Trading Post, was established 13 miles downriver from the present site. In 1881, Church of England missionaries from Canada built a mission 8 miles downriver. Between 1887 and 1900, an elaborate school and hospital complex, the St. James Mission, was constructed. It became an important source of services and social change along both rivers. In 1898, Fort Gibbon was founded at Tanana to maintain the telegraph line between Fairbanks and Nome. A post office was also established, and several other trading posts developed around the turn of the century. Gold seekers left the Yukon after 1906. Ft. Gibbon was abandoned in 1923. The St. James Hospital was transferred to the BIA administration in the 1920s. During World War II, an air base was established near Tanana as a refueling stop for the lend-lease aircraft program. New hospital facilities were built in 1949; and during the 1950s, hospital administration was transferred to the U.S. Public Health Service. The City of Tanana was incorporated in 1961. The hospital complex was a major employer during this period, employing 54 persons with a payroll of $1.6 million, but was closed in 1982. During 1982, Tanana incorporated as a First Class City in order to assume control of the local school system. The hospital facilities were remodeled for use as a health clinic, counseling center, tribal office, and Regional Elders's Residence.

Current Energy Status PCE

Electric (Estimates based on PCE)

Estimated Local Fuel cost @ $110/bbl **$5.15** /kw-hr

Current efficiency	**13.41**	kW-hr/gal	Fuel COE	**$0.40**	/kw-hr	Estimated Diesel OM	**$24,030**
Consumption in 200	**93,988**	gal	Est OM	**$0.02**	/kw-hr	Other Non-Fuel Costs:	**$365,086**
Average Load	**137**	kW	NF COE:	**$0.30**	/kw-hr	Current Fuel Costs	**$483,963**
Estimated peak loa	**274.31**	kW	Total	**$0.73**		**Total Electric**	
Average Sales	**1,201,487**	kW-hours				**$873,079**	

Space Heating (Estimated)

2000 Census Data		2008 Estimated Heating Fuel used:	**68,484**	gal	
Fuel Oil:	**41%**	Estimated heating fuel cost/gallon	**$6.15**		
Wood:	**59%**	$/MMBtu delivered to user	**$55.77**	**Total Heating Oil**	
Electricity:	**0.0%**	Community heat needs in MMBtu	**8,218**	**$421,125**	

Transportation (Estimated)

Estimated Diesel: **24,742** gal Estimated cost **$6.15**

Total Transportation **$152,141**

Energy Total **$1,446,344**

Possible Upgrades to Current Power Plant

Power Plant - Performance Improvement to higher efficiency

Upgrade needed:

Powerhouse Upgrade

Status **Pending**

Acheivable efficiency **14** kW-

New Fuel use **90,016**

Capital cost	**$100,000**		
Annual Capital cost	**$8,377**	$0.01	/kw-hr
Estimated Diesel OM	**$24,030**	$0.02	
New fuel cost	**$463,511**	$0.39	
Avg Non-Fuel Costs:	**$389,116**	$0.30	
New cost of electricity		**$0.70**	per kW-hr

Savings **$12,076**

Diesel Engine Heat Recovery

Heat Recovery System Installed? **Y**

Is it working now? **Y**

BLDGs connected and working:

Powerhouse Only

			Value
Water Jacket	**14,098**	gal	**$86,693**
Stack Heat	**0**	gal	**$0**

Capital cost	**$384,037**		
Annual ID	**$32,169**		
Annual OM	**$7,681**		
Total Annual costs	**$39,850**		
Heat cost	**$25.58**	$/MMBtu	

Savings **$46,842**

Alternative Energy Resources

Wind Diesel Hybrid

Installed KW	**400**	Capital cost	**$3,071,563**	per kW-hr
kW-hr/year	**830746**	Annual Capital	**$206,457**	$0.25
Met Tower?	**no**	Annual OM	**$38,976**	$0.05
Homer Data?	**yes**	Fuel cost:	**$0**	$0.00
Wind Class	**7**	Total Annual Cost	**$245,433**	$0.30
Avg wind speed	**8.50** m/s	Non-Fuel Costs		$0.32
		Alternative COE:		**$0.62**
		% Community energy		69%
		New Community COE		**$0.64**
		(includes non-fuel and diesel costs)		

Heat Cost $/MMBtu : $72.82 | $13.75 | **$86.56**

Savings

$105,808

Alternative Energy Resources

Wood

Installed KW	**164**	Capital cost	**$2,425,756**	per kW-hr
kW-hr/year	**1219094**	Annual Capital	**$163,049**	$0.13
Installation Type	**Wood ORC**	Annual OM	**$153,774**	$0.13
Electric Wood cost	**$150/cd**	Fuel cost:	**$231,086**	$0.19
Wood Required	**1541** Cd/Y	Total Annual Cost	**$547,908**	$0.45
Stove Wood cost	**250.00** $/Cd	Non-Fuel Costs		$0.32
		Alternative COE:		**$0.77**
		% Community energy		101%
		New Community COE		**$0.78**
		(includes non-fuel and diesel costs)		

Heat Cost $/MMBtu : -90 | **$29.76**

Savings

$325,170

Biomass For Heat

Heat Deliverd:	**425000** BTU/hr	Garn heater installed cost	**$500,000**
Cords/day:	**1.8**	Annual ID	**$33,608**
Hours per year	**6000**	Capital per MMBt	**$13.18**
Wood (cordwood or willows)	**$225** $/cord	Fuel cost per MMBtu	**$20.09**
		Total per MMBT	**$33.27**
		Annual Heat	31.0%

Other Resources

Tanana

Tidal:	
Wave:	
Coal Bed Methane:	
Natural Gas:	
Coal:	
Propane:	

Renewable Fund Project List:

For detailed information, consult the AEA web site. akenergyauthority.org

A project titled: Tanana Alternative Energy Assessment _Tanana Power has been submitted by: Tanana Power Company for a Other project. The total project budget is: $393,298 with $303,060 requested in grant funding and $90,238 as matching funds.

A project titled: Tanana Biomass Feasibility has been submitted by: Tanana Tribal Council for a Biomass project. The total project budget is: $39,868 with $30,668 requested in grant funding and $9,200 as matching funds.

ALASKA ENERGY AUTHORITY

App #281 Tanana Alternative Energy Assessment _Tanana Power

Resource: Other

Proposer: Tanana Power Company

Proposed Project Phase: Feasibility
Recon

AEA Program Manager: Lenny Landis

Applicant Type: Utility

Project Description

The Tanana area is blessed with a multitude of possible alternative energy resources including:
1) Wind Energy at is T. 5 N., R. 21 W. Sec. 10 located approximately 10 miles from downtown Tanana proper.
2) Wind Energy at T. 4 N., R 20 W. This resource was eliminated as a possible because of transmission line costs from the site to Tanana. The transmission line would have to cross the Yukon River.
3) Wind and Kinetic Hydro at T. 6 N., R 17 W. commonly referred to as "The Rapids". This has both wind and water energy available however transmission line costs from The Rapids to Tanana, given the terrain, would be very costly.
4) Geothermal at Little Melozitna Hot Springs (65.459, 153.312). There has been cursory analysis done on this resource using chalcedony geo-thermometer methods by Kolker. These results are encouraging. However, the magnitude of the resource needs to be defined better to determine if it would be economically prudent to develop.
5) Traditional Hydro at Jackson Creek located at T. 5 N., R. 21 W. and T. 6 N., R 21 W. The project has been studied before by the APA in the 1980s. Information regarding the study can be found in "Reconnaissance Study of Energy Requirements and Alternatives for Tanana" Report Summary.
6) Kinetic Hydro Energy production using the Yukon River at Tanana using drag turbines. Grant funds would be used to do engineering assessments of resources 4 and 5 with the contributed funds and in kind resources of Tanana Power and the community of Tanana devoted to quantifying the resources 1 and 6.

The ultimate goal being to determine "the best" resource to develop of the community to meet the community of Tanana's long term energy needs most cost effectively.

Funding & Cost

Cost of Power:	$0.57 /kWh
Requested Grant Funds:	$303,060
Matched Funds Provided:	$90,238.5
Total Potential Grant Amount:	$393,298.5
Existing RE Fund Grant Offer:	
AEA Funding Recommendation: (Not Constrained by Available Funding)	

AEA Funding Recommendation:

AEA Recommendation

Full Funding
Partial Funding
Special Provision
X Not Recommended
Did Not Pass Stage 1
Withdrawn

Alaska Renewable Energy Fund: Round 2 (Mar-09)

ALASKA ENERGY AUTHORITY

App #281 Tanana Alternative Energy Assessment _Tanana Power

Resource: Other

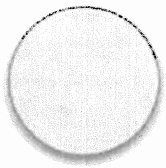
Proposer: Tanana Power Company

Proposed Project Phase: Feasibility Recon

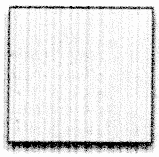
AEA Program Manager: Lenny Landis

Applicant Type: Utility

Scoring & Location



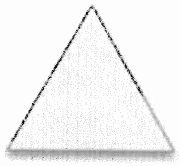
Overall Rank (out of 60)



Stage 3 Total Score (out of 100)

Energy Region: Yukon-Koyukuk/Upper Tanana

Election District: 6, Interior Villages



Rank within Region (out of)

Stage 3 Scoring Summary

Criterion (Weight)	Score
1) Cost of Energy (Max 30)	21
2) Funding Resources (Max 25)	
3) Project Feasibility from Stage 2 (Max 20)	
4) Project Readiness (Max 5)	
5) Benefits (Max 10)	
6) Local Support (Max 5)	
7) Sustainability (Max 5)	

AEA Review Comments

Applicant proposes to assess alternative energy resources of Tanana.

The work that the applicant proposes, while potentially valuable to Tanana, is more effectively accomplished using standard methodology on a statewide and regionwide basis that builds on the work already done in the statewide energy report that was released after this application.

Recommend no funding.

App #281 Tanana Alternative Energy Assessment _Tanana Power

Resource: Other

Proposer: Tanana Power Company

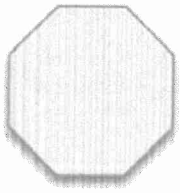
Proposed Project Phase: Feasibility Recon

AEA Program Manager: Lenny Landis

Applicant Type: Utility

Economic Analysis

Benefit/Cost Ratio (Applicant)



Benefit/Cost Ratio (AEA)