



**ENERGY COMMITTEE  
REGULAR MEETING AGENDA  
Monday, May 11, 2015 6:30 pm  
City Hall Council Chamber, Bethel, AK**

**Members**

Mary Weiss  
Chair  
mtweiss@uaa.alaska.edu

Shari Neth  
Vice-Chair  
Shari\_neth@lksd.org

Zach Fansler  
Council Representative  
zfansler@cityofbethel.net

Jeff Sanders  
Jeefco2004@yahoo.com

Eddie Stanley  
eddieselectric@gci.net

Wade Ferdig  
wadeferdig@gmail.com

Jody Drew  
Jody\_drew@yahoo.com

Alternative Members:

**Ex-Officio Member**

John Sargent  
Recorder  
543-1386  
[jsargent@cityofbethel.net](mailto:jsargent@cityofbethel.net)

**I. CALL TO ORDER**

**II. ROLL CALL**

**III. PEOPLE TO BE HEARD – Fifteen minutes per person**

**IV. APPROVAL OF AGENDA**

**V. APPROVAL OF MEETING MINUTES**

- a. Regular Energy Committee Meeting April 6, 2015

**VI. UNFINISHED BUSINESS**

- a. Alternative Energy Report Update
- b. Recommendation of Land Lease to AVEC for Wind Energy Development
- c. Recommendation that Bethel City Council Investigate the Purchase and Use of Waste Heat from AVEC
- d. Update on AVEC Energy Efforts in and for Bethel (John)
- e. Renewable Energy Alaska Project – City membership consideration
- f. Pool Wind Turbine Data Collection and Display

**VII. NEW BUSINESS**

- a. Alternative Energy News & Ideas
- b. Solar City – Tesla Update (Wade)
- c. Ron Kaiser (guest) Information on Waste Heat

**VIII. COMMITTEE MEMBER COMMENTS**

**IX. ADJOURNMENT**

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# City of Bethel

## Energy Committee

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April 6, 2015

Regular Meeting

Bethel, Alaska

### I. CALL TO ORDER

A regular meeting of the Energy Committee was held on April 6, 2015 at 6:30 pm in the City Hall Council Chambers, in Bethel, Alaska.

Vice Chair Shari Neth called the meeting to order at 6:35 pm.

### II. ROLL CALL

The following Committee members were present, demonstrating a quorum:

Shari Neth  
Mary Weiss (participating by telephone)  
Wade Ferdig  
Jody Drew  
Zach Fansler  
Jeff Sanders  
John Sargent (Ex-Officio)

### III. PEOPLE TO BE HEARD

None

### IV. APPROVAL OF AGENDA

<b>MOVED:</b>	Zach	Approve Agenda.
<b>SECONDED:</b>	Jody	
<b>VOTE ON MAIN MOTION</b>	All in favor Motion passes; 6 and 0 opposed.	

### V. APPROVAL OF MEETING MINUTES

<b>MOVED:</b>	Jody	Approve Regular Energy Committee Meeting Minutes (items a, b, c, d).
<b>SECONDED:</b>	Jeff	
<b>VOTE ON MAIN MOTION</b>	All in favor Motion passes; 6 and 0 opposed.	

### VI. UNFINISHED BUSINESS

- a. Alternative Energy Report Update
  - Shari read each item on tracking form; information added as appropriate.
  - John to make corrections.
- b. Municipal Solid Waste Gasification Findings
  - John reported results of his internet search. Group wants info. emailed to all.

- c. Renewable Energy Alaska Project – City membership consideration
  - Concern that REAP is losing money. John to investigate and see if organization is still viable. Cost for City to join?
- d. Update on AVEC Energy Efforts in and for Bethel by AVEC Representative by telephone/in-person.
  - Zach spoke to Meera Kohler.
  - City needs to get waste heat on Energy Committee agenda and Council agenda.
  - AVEC still interested in Natural Gas power plant in Prudhoe Bay and electric lines from it to the grid.
  - AVEC will not let irresponsible village join the cooperative.
  - Need to create a public fact sheet on how residents can set up alternative energy with AVEC. The fact sheet could be put in AVEC electric bills, so that every resident gets one. Mary to call AVEC. Zack to email Meera.
  - Ruralite magazine could be given out electronically – too much waste at PO.

**VII. UNFINISHED BUSINESS**

- a. Alternative Energy News & Ideas
  - Update provided on Energy Workshop sponsored by NREL & held at cultural center.
  - John took two NREL folks to sewage lagoon. They suggested the City buy a solar powered pump and movable solar array to power it.
  - Batteries for solar and wind power are expensive to maintain. Need to smooth out flow of electricity. Residential units are different than the one for the sewage lagoon pump.
  - Need to buy universal use items – multiuse; more functional.

<b>MOVED:</b>	Zach	Move new business items to unfinished business for next agenda.
<b>SECONDED:</b>	Jeff	
<b>VOTE ON MAIN MOTION</b>	All in favor Motion passes; 6 and 0 opposed.	

<b>MOVED:</b>	Jody	Move regular Energy Committee meeting date and time to second Monday of the month at 6:30 pm.
<b>SECONDED:</b>	Jeff	
<b>VOTE ON MAIN MOTION</b>	All in favor Motion passes; 6 and 0 opposed.	

**VIII. COMMITTEE MEMBER COMMENTS**

**IX. ADJOURNMENT**

<b>MOVED:</b>	Zach	Adjourn meeting.
<b>SECONDED:</b>	Jody	
<b>VOTE ON MAIN MOTION</b>	All in favor Motion passes; 6 and 0 opposed.	

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Shari Neth, Vice-Chair

ATTEST:

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John Sargent, Recorder

**City of Bethel  
Energy Committee  
Renewable/Alternative Power Options  
Updated March 3, 2015**

<b>Project</b>	<b>Description</b>	<b>State of Development (Timeline)</b>	<b>Pros</b>	<b>Cons</b>
1. Wind Energy Construction Project (AEA & Denali Commission funding)	AVEC has \$2.9 million from City. They will use it to design upgrades to power plant to prepare to accept alt. energy.	Need to call AVEC for an update.	Prepare for large-scale wind in Bethel; potential to lower cost of electricity.	Not enough money to pay for upgrades to generators/switch gear; may not lower cost of electricity.
2. Wind Energy Feasibility Study	City hired EPS to perform wind data analysis and wind data collection in Bethel.	Grant deadline: June 30, 2015	Helps AVEC move closer to providing wind energy in Bethel;	Small amount of money; City land harder for AVEC to use because must be leased by Council;
3. LNG shipped to Bethel from Fairbanks	Carry LNG down Yukon River then overland on winter road to Kuskokwim River, then down to Bethel.	Proposal rejected in 2012	Potential to lower cost of fuel for heating; could be a "bridge" fuel between fossil fuels and other sources; one LNG plant in north slope could power the State.	Years away;
4. Large natural gas-fired plant located near North Slope	Large plant built near clean, cheap, natural gas sources. Power transmitted via DC power lines all over State.	Formal study expected. AVEC promoting project.	Stabilize electric power in many places; may be able to be delivered to Bethel.	Many years away; High cost; No support yet. Meera Kohler continues to champion it.

Project	Description	State of Development (Timeline)	Pros	Cons
5. Bethel Natural Gas Development	Drill for natural gas in the YK Delta.	Find formal study of hole drilled near Bethel by Amoco.	Potential to lower cost of electricity; Bethel could make LNG in plant and ship to villages; run lines to villages.	Expensive; preliminary results do not support it; Need high population to make cost cheaper relative to demand.
6. City re-connect waste heat lines from Bethel Power Plant.	AVEC expressed interest in idea, but City has not pursued it; 3 city buildings can be hooked up: Fire Station, Courthouse, City Hall.	No deadline, no timeline.	Savings over heating oil;	Price of waste heat has risen over the years, lowering the benefit; heat may not be hot enough to heat building effectively with other demands.
7. Natural Gas Pipeline to Donlin Creek Mine	If natural gas piped in to mine, then pipe could be extended to Bethel.	Planning stage. No timeline. Mine mostly shut down while they wait for NEPA approvals.	Natural gas is clean, plentiful, and may be cheaper than heating oil. Donlin hired MacDowell to survey region residents and this project mentioned.	Depends on NEPA approvals and mine going into operation.
8. Biomass System	AVCP project?		Willows and alders grow fast; Easy to transplant;	Alder and willow leave no coals, making them poor biomass contributors.
9. Gasification unit to power public works building or aerators at sewage lagoon	Burn municipal solid waste in super hot incinerator (gasification unit) to create electricity and get rid of waste.	Planning stage.	Electricity may be cheaper; solid waste reduced to 5% ash; can provide power to a City building; Landfill close to PW bldg.	Environmental costs unknown (air monitoring); high cost of heating oil to operate unit; cost in City manpower and resources to operate.

Project	Description	State of Development (Timeline)	Pros	Cons
10. Kinetic Energy from Kuskokwim River	Turbines placed on old barge and sunk to bottom where the river movement generates electricity.	UAF did a study 3 years ago on the Kuskokwim in Bethel. Need a copy of that study.	Potential for a cheap source of power; Power lines emanating from the river need a place for power to go: into grid, to buildings; may work under ice perfectly with little disturbance from above.	Shallow river may not lend itself to ideal locations for sunken barges; maintenance costs unknown; may present river navigation hazard.



# City of Bethel

## Energy Committee

### Recommendation to City Council

#### Lease City Land to AVEC for Wind Energy Development.

<b>Committee/Commission:</b> Energy Committee	<b>Chair:</b> Mary Weiss
<b>Date Submitted:</b> 5/11/15	<b>Council Rep:</b> Zach Fansler

**Background:**

The Alaska Village Electric Cooperative (AVEC) is benefitting from the remaining balance (~\$78,000) of the City of Bethel’s wind energy feasibility study State Legislative Grant to perform wind data analysis, set up anemometers on two potential sites for large scale wind energy development, and collect and analyze new wind data. AVEC arranged to set up one anemometer on KYUK property. AVEC is looking for one more site in Bethel with wind energy development potential to set up its second anemometer.

The City of Bethel owns land east of the Recycle Center that represents the most conducive City-owned land for the permanent installation of large-scale wind turbines (900 kw to 1.5 mw). All leases of land must be approved by City Council through an change in ordinance.

**Recommendation:**

The Energy Committee recommends that the Bethel City Council direct Administration to prepare a land lease that allows the City to lease land to AVEC to be used for wind data collection via the set up and operation of an anemometer in the short-term and installation of large-scale wind turbines in the long-term. Council must also direct Administration to prepare an ordinance to dispose of land through lease to AVEC.

Received by: \_\_\_\_\_  
 Date: \_\_\_\_\_



# City of Bethel

## Energy Committee

### Recommendation to City Council

#### Investigate Purchase and Use of Waste Heat from AVEC.

<b>Committee/Commission:</b> Energy Committee	<b>Chair:</b> Mary Weiss
<b>Date Submitted:</b> 5/11/15	<b>Council Rep:</b> Zach Fansler

**Background:**

According to Senator Lyman Hoffman, the Alaska State Legislature awarded grant funds to pay for pipes, pumps, and other infrastructure necessary to carry waste heat from Bethel Utilities Corporation power plant to many buildings, including the Bethel Fire Station, City Hall, and Courthouse. The waste heat infrastructure allows hot water to leave the power plant at 180° F, travel through a pipe to a building, run through a glycol heat exchanger, and then return by pipe to the power plant.

The City enjoyed the benefits of purchasing waste heat from BUC for many years. In 2006, after waste heat contract negotiations broke down between the City and BUC, BUC stopped providing the City with waste heat. The City has been paying for heating oil to heat the Fire Station, City Hall, and Courthouse since that time, incurring a greater cost.

Aside from the savings that could be realized for the City buildings with waste heat connections, CRW nearly completed a waste heat facility that would allow the City to apply waste heat to the New QFC2 Lift Station located along the highway. Due to the breakdown in waste heat contract negotiations in 2006, the facility was never finished.

**Recommendation:**

The Energy Committee recommends that the Bethel City Council investigate the purchase and use of waste heat from AVEC. If the purchase of waste heat appears lucrative, the City should begin contract negotiations, sign a mutually agreeable contract, and re-connect the lines to City buildings.

Received by: \_\_\_\_\_  
Date: \_\_\_\_\_