

**Alternative Energy Committee
Regular Meeting
January 12, 2006, 6:30 pm
City Manager's Office**

Minutes

Meeting # 3

Attendance: Dan Leinberger, John Sargent, Wayne Ogle, Jill Maynard, Pete Christian.
Absent: Willy Keppel, Gene Peltola.

The meeting was called to order at 7:40 pm. Roll call was taken. No people came to be heard. The agenda was approved as presented. The minutes of November 10, 2005 were approved as revised by John Sargent.

Several committee members gave an overview of what was discussed at the last meeting (December 1, 2005) and events that have transpired between the last meeting and this January 12, 2006 meeting. During the last meeting, the committee recommended to City Council that the City prepare and submit a proposal to the Alaska Energy Authority for funding to support a small commercial wind turbine project. At their meeting on December 13, 2005, the Bethel City Council approved Resolution #05-42 supporting a grant application for a wind power demonstration project and corresponding cash match of up to \$62,000. On December 1, 2005, the Committee agreed on the short-term goal of installing and operating a small commercial wind turbine as a demonstration project and a long-term goal of owning and operating a commercial wind farm that would have the potential to lower the cost of electricity for Bethel residents. Alaska Statute Title 42 and various organizational forms that a wind power producer could take were also discussed at the December meeting.

Moved by:	John Sargent	That minutes of November 10, 2005 be approved, as prepared by Secretary Willie Keppel and revised by John Sargent.
Seconded by:	Pete Christian	
Discussion:	None	
Vote:	Motion passed by unanimous voice vote.	

Small Wind Turbine Grant Proposal

Three major steps needed to prepare for the City's small wind turbine grant application were given: (1) wind data summary, (2) wind turbine specifications, and (3) foundation details and costs. Other parts of the proposal include: budget, location, supporting documents, insurance requirements, geotechnical analysis, and agreement with Bethel Utilities, Inc.

Question was posed about whether Public Works Department could do some of the foundation work as an in-kind contribution. Wayne said that some of the work could be done by Public Works, but engineers would have to be consulted to determine exactly what needed to be done.

Question raised about the City's indemnification under its existing insurance policy for the wind power project.

Idea expressed that having a Request for Proposals asking for a small wind turbine (50 kw – 100 kw), tower and foundation prepared in advance would strengthen the City's grant application for

the wind turbine. The City would submit the RFP with its proposal, indicating readiness to comply with the expected short time requirement for project implementation (est. 6 mos.).

Several committee members volunteered to help prepare material for the grant application:

Wind data – Jill Maynard
Wind turbine information – Pete Christian
Foundation information – Wayne Ogle
Insurance questions – John Sargent

Attempted telephone call to Dennis Meiners with Alaska Powercorp was made at 7:30 pm. No answer. Left message that committee would return call shortly.

City of Bethel Purchase of Bethel Utilities, Inc.

Short history of previous attempts made to purchase Bethel Utilities, Inc. given. In each case, the price asked was too high to make the purchase economically feasible.

One benefit to the City, if purchase made, would be the City's ability to operate the electrical utility without the necessity to maximize profit through continued rate increases. The City could run the utility at close to break-even, saving the consumers money on their electrical bills.

Dennis Meiners, Powercorp Alaska

The Committee reached Dennis by telephone at 7:50 pm. He gave his background, which include his 10 years of experience working at the Alaska Energy Authority.

Bethel is important hub community. Wind power service center in Bethel would greatly help other communities currently set up for wind power and those yet to be developed.

Recommendation that Bethel take careful, planned steps to develop its wind power resource. Suggests the Bethel implement a demonstration project to learn from before implementing a large wind farm. Likes the idea of Bethel pursuing a small commercial wind turbine to be installed at the Public Works building and *meter behind the meter* arrangement with Bethel Utilities.

Powercorp Alaska remanufactures a 65 kW wind turbine originally manufactured by Vestas. The Vestas company no longer makes wind turbines this small anymore. Powercorp buys 200 of these machines at a time, fixes them up with new technology, and sells them.

Dennis believe the only machines that are viable for use at the Public Works building as a small demonstration project are his remanufactured Vestas V15 (65 kw) or the Entegritiy EW15 (50 kw). The Northwind 100 (100 kw) machine is too large, cost prohibitive (\$290,000 for machine + \$650,000 for foundation), and can't be produced in a timeframe necessary for grant approval. The Furlander wind turbines have similar disadvantages: too expensive (\$500,000 - \$600,000 installed) and over 15-month time required from order to delivery.

One of his Vestas V15 machines is being shipped to Kotzebue next week.

Powercorp works with Energy Maintenance Services in California and South Dakota to reengineer the Vestas machines. He estimates that there are 2,500 Vestas turbines in California that have the potential to end up on the remanufacture market.

Dennis expressed the importance of a new wind power producer "ramping up" gradually to larger machines. He believes Bethel should start small with one 50 kw or 65 kw machine and then work up to a Northwind 100 or 225 kw machine. There is a need to ramp up as your knowledge of operating and maintaining the turbines, tower, and foundation grow. At the same time, you don't want to end up with too many small machines in a large farm that require a great deal of maintenance relative to their energy output. Large machines are definitely more cost effective to operate.

Lynden Air Cargo flies his Vestas machines to Anchorage. He distributes the turbines via air, not barge. He said that due to the relatively small size and weight of these machines, the cost difference between barge and airplane for transport was not that significant.

A rule of thumb is that the height of the wind tower is twice the height of the rotor diameter.

He can envision Bethel's wind farm containing ten 500 kw machines. A large project like this could draw in private investors, whose companies can benefit from tax advantages that are not available to municipalities. For instance, a company could sign an agreement with a wind power producer (e.g., City of Bethel) that requires the company to pay for the purchase and installation of a wind turbine and tower. The company would operate it for ten years or so and reap federal tax savings and then sell it to the producer at a certain price.

It was suggested by a Committee member that the City would share the data, knowledge, and experience it gains from setting up and operating its small commercial wind turbine with Bethel community residents. These residents could then use that information to make their own investment in wind power facilities for their home or business. Turbines could be spinning all over town.

**Alternative Energy Committee
Regular Meeting
February 2, 2006, 6:30 pm
City Manager's Office**

Minutes

Meeting # 4

Attendance: Dan Leinberger, John Sargent, Wayne Ogle, Jill Maynard, Pete Christian, Willy Keppel
Absent: Gene Peltola

The meeting was called to order on or about 6:40 pm. Roll call was taken. No people came to be heard. The agenda was approved as amended.

Moved by:	John Sargent	That Approval of Minutes of January 12, 2006 be removed from the agenda.
Seconded by:	Pete Christian	
Discussion:	None	
Vote:	Motion passed by unanimous voice vote.	

Notebooks and several packets of information were distributed to members of the committee. Time was spent punching holes and filling notebooks.

It was mentioned that the committee's recommendations and resulting City Council resolutions be passed out to members. John said he would get those for the next meeting.

Update on AEA Request for Proposals

Target dates for releasing the RFP is February 6, 2006, giving a 30 day deadline of March 6, 2006.

Small Wind Turbine Grant Proposal

We have to have the wind turbine project done by the end of summer, per conversations with Reuben Lowen and Mia Devine with AEA.

Pete checked with five companies in the Lower 48 States on wind power. None of them have cold weather experience.

Companies with systems that will work for us: Fuhrlander, Northern Power, Vestas, Entegrity.

It was suggested that having a RFP that the City of Bethel would issue after the grant was approved would be an important indicator to the grant reviewers that the City is "ready to go." AEA said they want the project to move fast and have wind power installed and running. We have to ask manufacturers for specifications on the turbine and tower they sell and get foundation specifications. We might have to call engineers for an estimate. We can get costs from local builders once we have a foundation design that is feasible.

Where should the tower be located? Where is the water treatment plant going to go? What about other proposed buildings near the City Shop? Mia Devine is coming to town on February 10-11

and should be able to give us guidance then on tower placement. We can ask Lenny for his opinion too. Might have to balance the two opinions – reach a compromise.

Dan and Wayne will speak to Bethel Utilities Corporation about what is involved in hooking up the small wind turbine to the grid and allowing it to provide power to the Public Works building and where BUC thinks ideal location would be. Wayne has location of wastewater treatment plant that he will get to John.

Demonstration Project to Test Alternative Wind Turbine Foundation Systems in Bethel

It was mentioned that this foundation system test should test for the tower and large wind turbines that we hope to put in the wind farm, not the for the small one that we are working on for our demonstration project. A cheaper cost in the testing will allow for more money to build towers.

The location of our wind farm is key. Where do we want the 500 kw machines?

We can get money from the Denali Commission to help us with our cash match or grant funding.

Moved by:	Willie Keppel	That the Committee recommend that the City Manager present a resolution to City Council to pursue funding for a foundation demonstration project in Bethel.
Seconded by:	John Sargent	
Discussion:	None	
Moved to Amend by:	?	That the City not contribute any cash to this project, but in-kind products and services only.
Vote:	Amendment and Motion passed by unanimous voice vote.	

Articles and information were disseminated.

Does the City have the heavy equipment to do a large wind farm?

It was mentioned that Larry Miles might be a good contact for us. He designed a turbine with a trailing blade. He makes 250 kw and 500 kw machines.

We could pursue a Norway and Denmark partnership.

People in Bethel know how to drive pile in the ground to hold a tower up. We don't need all these engineers to tell us how to do that. We can get an estimate from the local contractors.

All Committee members were invited to help Willie and state people take down the tower on February 10-11, 2006. John pledged to be there.

**Alternative Energy Committee
Regular Meeting
May 8, 2006, 6:30 pm
City Council Chambers**

Minutes

Meeting # 7

Attendance: John Sargent, Wayne Ogle, Jill Maynard, Pete Christian, Willy Keppel
Absent: Gene Peltola, Dan Leinberger

The meeting was called to order on or about 6:40 pm. Roll call was taken. No people came to be heard. The agenda was approved as amended to include *E. Information Dissemination*, under New Business.

With Dan absent, Willie acted chaired the meeting.

A. Proposals to Alaska Energy Authority: What is our next move?

The anticipated Request for Proposals for Alaska Energy Cost Reduction Projects was issued by the Alaska Energy Authority on April 17, 2006. Proposals are due June 27, 2006. This funding for the RFP will be given in grant/loan combinations. Copies of RFP and grant application checklist were distributed.

It was mentioned that the City was unable to ascertain a signed letter from the Bethel Utilities Corporation board chairman in support of the City Shop Wind Power Project. Independent power producers (IPPs) are required by the AEA grant guidance to submit a letter, resolution, MOA, or other signed document from the utility governing board agreeing to purchase power from the IPP. The response from the BUC chairman is that the current tariff contains statements verifying that BUC will purchase power from an IPP at the avoided cost to produce power. The issue of whether the tariff could substitute for such a document was brought to the attention of AEA via an email message to Rueben Loewen. He promised to discuss it with AEA's procurement manager.

The idea that the Alternative Energy Committee needs to find its direction again and establish its priorities was brought up. Should we pursue our short-term goal of a small commercial wind turbine or work on our long-term goal of a wind farm? Should we be focusing on what we would like in a wind power study?

It was moved and approved that each member of the committee would come to the meeting next time with a vision statement and suggested committee goals. This issue of determining direction will be on the agenda for our next meeting.

New Business

BUC Deposit Requirements

Willie explained his personal situation with utility deposits and gave his suggestions for changes to BUC policies. He advocated for the group to recommend to the City Manager that the Manager and City attorney spend time researching BUC policies and other applicable laws and send BUC and/or the Alaska Regulatory Commission a letter suggesting changes to their policies regarding electric utility deposits.

Several comments were made in favor of the idea of changing BUC policy, but on an individual basis, not as a committee. Several comments were made regarding the issue's relevance to the purposes of the Alternative Energy Committee. Comments opposed to the recommendation included not wanting to hamper relations between the City and BUC as the City seeks the cooperation of BUC in wind energy projects.

A comment made in favor of the idea: the letter could serve as evidence that the City did everything in its power to have the cost of electricity for Bethel residents. The City might be requested to show a trail of effort undertaken to lower costs.

Lengthy discussion ensued. A motion was finally made and approved to pass over this agenda item and move to the next one.

Purchase of BUC by City of Bethel – Status Report

No new progress reported.

Future Grant Opportunities

John mentioned a new grant opportunity that is due out soon from the U.S. Dept. of Agriculture: High Energy Cost grant. The Bethel community qualifies as a high energy cost community because one or more of its energy costs are over 275% of the national average.

Wind-diesel conference in Bethel, June 29, 2006

Jill mentioned that a Wind-diesel energy conference will take place in Bethel on June 29, 2006. The one-day session is being sponsored by AEA and Northern Power, among others. Jill plans to have AVCP, Inc. bring villagers in to attend the one-day workshop.

The idea of hosting a fish fry with all of the wind-diesel conference attendees was mentioned. The Lion's Club could be a good place to have it because they have barbeque grills we could use. This would be a great way for villagers and Bethelites to mingle.

Information Dissemination

The state legislature is close to passing the state budget that has \$150,000 in it for a Bethel wind energy study. The money would come in the form of a legislative grant to the City to administer.

Committee Member Comments

- We must continue to pursue wind power, including following a project idea to exhaustion.
- The high cost of fuel is a driver for us to find solutions.
- The committee needs to reestablish its direction.
- The small commercial wind turbine at the City Shop might still be a viable project. More research must be done.
- Be wary of grants. Oftentimes, the grant being offered causes the organization pursuing the grant to go after something different than what they really need. Make sure the grant offered helps us meet our goals.

**Alternative Energy Committee
Regular Meeting
June 1, 2006, 6:30 pm
City Council Chambers**

Minutes

Meeting # 8

Attendance: John Sargent, Wayne Ogle, Willy Keppel

Absent: Gene Peltola, Dan Leinberger, Jill Maynard, Pete Christian

Willie chaired the meeting.

Old Business

Wind-diesel conference in Bethel, June 29, 2006

It was expressed that the committee make the wind-diesel workshop scheduled for Bethel a committee-sanctioned activity. A motion was approved to recommend to the City Manager that he support the Alternative Energy Committee's desire to attend the workshop and pay the \$30 per person registration fee. The workshop includes travel to Toksook Bay to see two Northern Power operating wind turbines or Kasigluk to see the installation of one or two Northern Power turbines.

John volunteered to tell Amy Klinger, the Northern Power Marketing Manager organizing the workshop, that Wayne Ogle and Willie Keppel wish to attend the full-day workshop.

Willie plans to mention the conference to the boyscouts at their meeting to see if they want to attend the workshop to learn about wind power.

Having a fish fry the night before the wind-diesel workshop was discussed. Willie volunteered to be in charge of setting it up and making it happen. We could rent the Lion's Club and use their grill. Mayor Williams could volunteer to grill. The fish fry could be done the night before or as a lunch on the day of workshop.

During lunch, it is best if we keep all of the participants together during lunch to make the rounding them up and getting them on planes for the afternoon field trip. For this reason, a catered lunch to Cultural Center or quick fish fry at Lion's Club would work.

It was decided that the Alternative Energy Committee would meet on June 19, 2006 for a special meeting to hold a teleconference with Amy Klinger, workshop organizer who works for Northern Power. The meeting is a way for the Committee to express its desire to help Amy arrange the workshop. We will hold meeting at 12:00 pm (lunch hour) at the City Hall Council Chambers. John will set it up with Amy.

New Business

Legislative grant to City of Bethel for \$150,000 for wind energy study

The Alaska State Legislature approved \$150,000 for the City of Bethel to spend on a wind power study. It will be up to the City to spend the money wisely and get the most bang for its buck. The Alternative Energy Committee could play a significant role in determining how the money is spent.

We could ask that the study consider certain City buildings or other buildings in the community for wind power generation. We could have some locations evaluated for our wind farm or let the consultants come up with the best place for a wind farm. The study could assess land ownership and land use issues.

There is some state-select land available near Tundy Rodgers' native allotment that the City could claim.

Can/Should the City own the wind farm? The City could be an independent power producer or a regulated utility. We could apply for a permit from the Regulatory Commission of Alaska to operate as a utility.

Willie has been in touch with Federal Aviation Administration officials about the FAA regulations impacting the height and location of wind towers near the Bethel Airport. There must be a 1-40 slope from the center of the runway. At a 4,000 foot distance from the runway, a tower could be 100 ft. We might need the City Planner's help to determine what areas around the airport are unavailable by this rule.

The FAA information (content and format) has to be useful in grant applications.

Willie is running for the State Senate seat for the Bethel area. He is running against Lymon Hoffman. If elected, he will be in a position to help get funding for alternative energy development in Bethel.

Goals & Objectives for Alternative Energy Committee

The Alternative Energy Committee's homework assignment was to come prepared to this meeting with goals and objectives that the Committee could pursue. We will discuss the goals and objectives presented and vote on adopting several on which to act.

Willie handed out a typed page of his goals for the Committee. See attachment to these minutes.

John's Goals:

- Investigate and, if favorable, pursue, small commercial wind turbine in Bethel for a city building.
- Promote wind power development in Bethel by encouraging residential use and small commercial use. This might involve information dissemination, presentations, website development, etc.
- Establish a large-scale wind farm that produces electricity for community use.
- Investigate alternative forms of producing power (biodiesel, tidal generators, hydrogen, hydroelectric).

Wayne's Goals:

- Pursue purchase of BUC.
- Establish small commercial wind farm.
- Investigate alternative forms of producing power (biodiesel, tidal generators, hydrogen, hydroelectric)

John made a motion that meeting minutes would be prepared by the Secretary and approved by the Committee as a default and amended as needed thereafter. The motion carried.

Next Meeting

The next meeting of the Alternative Energy Committee will be July 6, 2006 at 6:30 pm at City Hall Council Chambers.

**Alternative Energy Committee
Regular Meeting
July 6, 2006, 6:30 pm
City Council Chambers**

Minutes

Meeting # 9

Attendance: John Sargent, Wayne Ogle, Willy Keppel, Dan Leinberger, Jill Maynard, Pete Christian
Absent: Gene Peltola

Meeting called to order at 6:33 pm. Agenda approved. No people to be heard.

Old Business

Debrief Wind-diesel Conference held in Bethel, June 29, 2006

Conference was well-attended, with 50 people attending the sessions at the cultural center and 35 attending the field trip to the village of Kasigluk. The pre-conference fish fry was well-received, with about 25 people attending. The high attendance could be indicative of the growing interest in wind energy in the YK Delta, likely driven by the every-increasing fuel prices. One attendee came from British Columbia and another from Barrow.

The conference was great for the community of Bethel because event organizers and participants spent money in this town on goods and services (e.g., airplane charters, meeting rental space, food & beverages, and lodging). Brett Pingree, Sales Director with Northern Power, pleased with the turnout, accommodations, and participant discussions, expressed interest in sponsoring another conference next year.

The wind turbines at Kasigluk were set right in town, near residences. Three North Wind 100 turbines could produce enough energy to power Kasigluk and two other nearby villages. The tubular tower offers the advantage of being able to access the turbine during inclement weather year-round. The application of blade extenders added one foot to the diameter of the blades, making them 20 feet. The machines were quiet, making only a "whoosh" sound, not the constant whirring that you hear from smaller residential wind turbines. The noise of the large turbines was masked by the sound of blowing wind.

It was no surprise for some to hear that Governor Murkowski and his administration recognize that Alaska is in the oil business and therefore resistant to any political action that promotes renewable energy as "the solution" rather than one of many solutions. Commissioner Bill Noll said that his administration prefers to focus on "reducing the cost of energy," which allows renewable energy solutions to be implemented, but not mandated.

Although it was an opportunity for commercial developers and homeowners to learn about the potential of wind energy, the information presented in the morning sessions was disappointing in that there were no steps given to develop wind energy in a village or City like Bethel. The focus appeared to be on Northern Power product specifics and foundation engineering coupled with the political aspects of developing wind energy in Alaska. A practical, how-to approach would have been helpful for those of us in a position to assist in the development of wind energy.

Alternative Energy Committee Goals and Objectives

Each Committee member took turns expressing his or her goals on which the Committee could achieve over the coming months/years. The Committee agreed to differentiate between short-term goals and long-term goals. Short-term goals will be those that can be accomplished in less than one year, whereas long-term goals will be those that take longer than one year to accomplish. Both types of goals would be pursued simultaneously.

Several Committee members felt a sense of urgency to get something going—get a project started. The point of contention was whether to initiate a short-term project of purchasing, installing and operating a small commercial wind turbine (50-100 kW in size) OR to initiate a long-term wind farm concept that might sport 20 turbines (500+ kW in size). The “either/or” thought process stemmed from the results of the information gathered to develop the City Shop Wind Power Project. The results showed a high cost (\$392,000), low return on investment (\$4,000/yr.), and consequently, a 23-year payback period. The use of the \$150,000 state legislative appropriation to the municipality of Bethel for a wind-energy study and the upcoming \$1.5 million grant opportunity by the Alaska Energy Authority played into the discussion of goals.

Sentiments expressed by the Committee:

- Desire to start a wind energy project, sooner is better than later.
- One turbine is better than none, three is better than one.
- We need a victory, a successful project.
- Be cautious about studies; many end up sitting on shelves, unused.

Goals expressed by the Committee:

- Develop small commercial wind turbine project for City building using net metering.
- Promote residential and small business use of wind turbines in Bethel.
- Establish a wind farm with 500 kW or greater sized turbines.
- Explore other forms of alternative energy that can benefit Bethel/YK Delta residents.
- Determine appropriate action the City should take when spending the \$150,000 legislative appropriation for wind energy study.
- Pursue AEA grant for \$150,000 in wind energy study funds so that City has \$300,000 to conduct thorough study to develop wind farm.
- Investigate and pursue other strategies for energy savings (e.g., waste heat recovery).
- Purchase, install, and operate large 500+ kW wind turbine near City Shop to generate electricity for the whole Shop and later to provide power to waste water treatment plant that will be located nearby.
- Use \$150,000 to study foundation designs with goal of lowering wind turbine foundation cost for a Bethel project.

Establishing a wind farm with large 500+ kW wind turbines was a goal on which all Committee members agreed. There are still many unknowns about the concept: Who will run it? Will we need to set up a new organizational form (e.g., non-profit corporation, co-op, utility)? Will all power generated be sold to the utility? Where should it be located? Whose land will be impacted? What size machines are the most appropriate for Bethel?

Committee members expressed concern over growing too fast, too quickly. A proper sequence of steps must be followed in order to develop a successful wind farm.

Legislative Grant to City of Bethel for \$150,000

A motion was made by Willie, seconded by Wayne, and approved by the Committee to recommend to the City Manager that the City pursue \$150,000 in AEA grant funds to add to the \$150,000 approved by the legislature for a wind energy study in Bethel. John said that he would investigate how much money was needed to conduct a study as thorough as the one desired by the Committee. John will also find out if AEA will accept more than one proposal from a submitting entity.

The Committee decided that Plan A regarding AEA's next grant opportunity would be for the City to pursue \$150,000 in study money. Plan B would be for the City to pursue grant funding for a 500+ kW wind turbine to be installed and operated near City Shop with the potential to provide power to the City's new waste water treatment plant.

A motion was made by Pete, seconded by Willie, and approved to recommend to the City Manager that the City evaluate the feasibility of purchasing, installing, and operating a 200+ kW sized wind generator for use at the City Shop.

New Business

Letter of Appreciation to Wind-Diesel Conference Attendees

A motion was made by Willie, seconded by Wayne, and approved by Committee to recommend to the City Manager that the City draft and send a "thank you for coming" letter to all wind-diesel participants and a special "thank you" letter to conference organizers.

AEA Grant to be Announced in July 2006

The Committee felt that this agenda item was discussed sufficiently under prior agenda items and therefore was not discussed further.

Addition of New Members to Alternative Energy Committee

A motion was made by John, seconded by Pete, and approved to cap the membership in the Alternative Energy Committee to 10 individuals. Jody Malus wants to join the Committee if it will meet on a night other than Thursday. Russ McDonald expressed interest in developing wind energy and should be invited to join the Committee.

Next Meeting

The Alternative Energy Committee will continue to meet on Thursdays at 6:30 pm in City Hall until another arrangement can be made. Committee members agreed that Monday nights at 6:30 pm would work to accommodate Jody's schedule. One Committee member suggested that the City Manager invite Jody and Russ to join the Committee.

**Alternative Energy Committee
Regular Meeting
August 7, 2006, 6:30 pm
City Hall Council Chambers**

Minutes

Meeting # 10

Attendance: John Sargent, Wayne Ogle, Willy Keppel, Jill Maynard, Jody Malus
Absent: Gene Peltola, Pete Christian, Dan Leinberger

Meeting called to order at 6:35 pm. Agenda approved. No people to be heard.

Unfinished Business

Addition of New Member to Alternative Energy Committee

When considering the Committee's July recommendation to the City Manager to cap the Committee's membership at ten, Wally Baird decided to expand the membership to nine members. Jody Malus was accepted as a new member, leaving one opening.

Legislative Grant to City of Bethel for \$150,000 for wind energy study (update)

John told the group that the City received the grant agreement from the Alaska Energy Authority to begin the \$150,000 wind study project. The deadline for the City to spend the money is June 30, 2011. There is no cash or in-kind match required for the City to fulfill the grant. The City Manager decided that the amount of money in this grant was sufficient for a study and that the City need not pursue additional wind energy study money at this time.

The group discussed many ideas on what should be included in the Request for Proposals (RFP), from specifically targeting giant turbines to allowing the consultants to arrive at a decision on the size, type, number, and spacing of wind turbines in Bethel. The one point on which Committee members agreed was the need for the study to focus on developing a wind farm.

In the development of a wind farm, some of the following factors will likely be included in the RFP: land ownership/use issues, Bethel wind data, siting of turbines, (size, make, model of wind turbines), avian considerations, Federal Aviation Administration requirements, turbine layout, project cost/savings, technical, logistical, and legal questions about a wind farm operated by an independent power producer that provides power to the existing utility grid.

John mentioned that the items contained in wind energy feasibility studies can be obtained from consultants and used to prepare the City's RFP. The advantage the City has is the competitive nature of the bid process. If a study can be done for \$100,000, then the City can use the remaining \$50,000 for a more refined study.

Willie provided several ideas on how to acquire a list of prospective consultants, planning firms, and wind experts for RFP dissemination: obtain prospect list from Chris Rose (Executive Director of REAP), contact Kotzebue Electric Association for names, and ask wind turbine manufacturers for contacts. John mentioned that the City routinely uses The Plans Room in Anchorage and the Association of Builders and Contractors in Washington State to distribute its RFPs. Both organizations act as clearinghouses to get the RFP information out to their members.

New AEA Grant for wind energy infrastructure

Recently obtained cost figures for a revamped City Shop Wind Power Project were shared with the group. The cost for foundation engineering services was \$54,000, the cost of a 500 kW wind turbine and tower FOB Houston, TX was \$752,000, and the proposed cost of a 50 kW Bergey wind turbine installed in Bethel was \$250,000. The smallest Vestas wind turbine made for U.S. distribution is of a 1.65 megawatt size. The 850 kW turbine they make is for European distribution only.

The City should evaluate all combinations of turbines for the resurrected City Shop Project: Two Northwind 100 kW machines, one 225 kW machine, one 500 kW machine, etc.

New Business

Discussion of Alternative Energy Sources Other Than Wind Energy

Jody informed the group that solar power is doable in Bethel, despite what the University of Alaska Fairbanks instructor indicated when he was here. There is information available online by googling "DARPA."

Nanotechnology applied to solar power research yielded amazing results. A few innovations include: special black paint that allows more heat to be absorbed, special batteries for storing power, and technology that allows a system to produce more solar power when the angle of the sun is less than favorable. Jody said that she will bring more alternative energy information to share at the next meeting.

The idea of visiting Tom McCaulson's place in Bethel to see his wind turbines and solar panels in operation was met with interest and enthusiasm. Tom also covered the inside of a satellite dish with one-inch mirror tiles, making a device that concentrates heat. He also assembled a computerized tracking device that will make the dish move to follow the sun across the sky, maximizing its heat potential.

Jody introduced the idea of an "intentional community" to the group. It is a community of people who share resources for the benefit of the whole, thereby reducing the overall need for resources, the amount of those resources, the cost of living, and the environmental harm the use of those resources can impart. She is aware of two intentional communities in the U.S., one in Kentucky and one in/near Asheville, North Carolina.

Council Member Comments

Jill said that her colleague at AVCP will attend the Renewable Energy for Tribal Community Development conference to be held in Denver, Colorado from August 21-25, 2006 and bring us back some information. The conference is sponsored by the Native American Energy and Mineral Institute.

Next Meeting

The Alternative Energy Committee will continue to meet on the first Monday of the month at 6:30 pm in City Hall. The next meeting will be held on September 4, 2006.