S. HRG. 110–637

# THE IMPACT OF HIGH ENERGY COSTS IN RURAL ALASKA NATIVE COMMUNITIES AND OPPORTUNITIES FOR ALTERNATIVE AND CONVENTIONAL ENERGY DEVELOPMENT

## FIELD HEARING

BEFORE THE

## COMMITTEE ON INDIAN AFFAIRS
## UNITED STATES SENATE

ONE HUNDRED TENTH CONGRESS

SECOND SESSION

AUGUST 28, 2008

Printed for the use of the Committee on Indian Affairs

U.S. GOVERNMENT PRINTING OFFICE

45–586 PDF WASHINGTON : 2009

For sale by the Superintendent of Documents, U.S. Government Printing Office
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# THE IMPACT OF HIGH ENERGY COSTS IN RURAL ALASKA NATIVE COMMUNITIES AND OPPORTUNITIES FOR ALTERNATIVE AND CONVENTIONAL ENERGY DEVELOPMENT

**THURSDAY, AUGUST 28, 2008**

U.S. SENATE,
COMMITTEE ON INDIAN AFFAIRS,
*Bethel, AK.*

The Committee met, pursuant to notice, at 9:30 a.m. on the University of Alaska—Fairbanks Kuskokwim Campus, Hon. Lisa Murkowski, Chairman of the Committee, presiding.

## OPENING STATEMENT OF HON. LISA MURKOWSKI, U.S. SENATOR FROM ALASKA

Senator MURKOWSKI. Good morning. We're calling to order this meeting of the United States Senate Committee on Indian Affairs, a field hearing to be held here in Bethel, Alaska.

Welcome to you all. I think it is incredibly significant that we are gathered here together in Bethel to listen to some individuals that will present various perspectives on what the impact of high energy costs are having on, not only our communities, but our families, and individuals here in Bethel, in the surrounding areas. I do believe that this is the first time that a field hearing of a Senate Committee, certainly the Senate Indian Affairs Committee, has ever been held out here. So for those of you from the Bethel boarding school here, you're witnessing history for the first time, so pay attention.

[Laughter.]

Senator MURKOWSKI. I would like to convey a special welcome to a couple of our out of town guests. We are privileged this morning to be joined by Representative Nancy Dahlstrom. Representative Dahlstrom has been in the Legislature now, I think, six years, and represents my old district and has done a good job for us there in Juneau. She's joined by Representative Bob Roses. Bob is also from the Anchorage area and you're working on your fourth year.

Representative ROSES. Well, hopefully, up until the next election.

Senator MURKOWSKI. All right.

[Laughter.]

Senator MURKOWSKI. A little advertisement there for you. But I think it is very important, I think quite significant that we have other policy-makers from the state here to just listen, to hear what is going on in this region. We recognize that as State legislators we

represent our own constituency but it is broader than that, and so your willingness to observe and to hear the testimony today is greatly appreciated and we thank you.

I also want to acknowledge Senator Lyman Hoffman. Senator, I don't know how long you've been serving this district out here but it's been so long and so good that we all forget the number of years.

Senator HOFFMAN. I'm starting my 23rd year.

Senator MURKOWSKI. 23rd year, all right.

[Applause.]

Senator MURKOWSKI. Well, we truly appreciate that. And we also know that it is a challenge for you in a Legislature that is predominately urban legislators. It's a challenge to explain some of what happens in your very extensive district. We're going to be joined by Bob Herron, who we congratulate on your successful election Tuesday. We know that you've got a job going down there, but you'll be teaming up with Lyman. We were hoping that Mary Nelson would be here with us. I ran into her in the airport, she has done a fine job representing you in the Legislature for years and years and we wish her well as she moves on.

We do have a very distinguished panel this morning. I will introduce each of them at the conclusion of my opening remarks and give you a little bit of their brief background.

The hearing here this morning has a very multi-faceted purpose. And we recognize that with the high energy prices that we face throughout this state and certainly throughout rural Alaska, you don't need me to tell you that we are at all time record highs. We know that the prices are so high that it's making it difficult for people to truly survive. Now, I know that we're going to be receiving very instrumental and helpful testimony this morning. But yesterday when I flew in, I had the opportunity to visit several of the grocery stores, to go by the gas station, to talk to people in the grocery stores, to go over to the VFW hall to meet with some of our veterans and active Guard folks, and then to meet with some of the community leaders at a dinner last night; and I have to tell you, when you go to bed thinking about the young woman who's moved in from one of the small villages because she couldn't live out there and she comes into town and she's excited because she has a job and that's good but she has no place to live, and when you talk to the Veteran who's been here for 44 years and has made the decision that he now has to leave, or when you run into the guy in the grocery store who says he's had a successful business here for 15 years, but he's going to have to close; and when you hear the stories about people who deny themselves health care because they live in an outlying village and they can't afford the price of an airplane ticket to come to town and so they wait and they wait and they wait until it then becomes an emergency and they're able to be medivac'd in, and YKHC will then pay for that ticket, but they put their life at risk because they can't afford the price of that airplane ticket because of the energy prices. This is a reality that you all are living with, that those of us who are not living here day to day can't fully appreciate the extent of. So what I'm hoping that we get this morning is a clarification, an explanation of what it is so that this becomes part of the United States Senate Indian Affairs Committee record, so that my colleagues, they that might not

be able to see it for themselves, but they can read it and perhaps better appreciate the challenges that you face on a daily basis.

We've got incredible potential here in Alaska when it comes to energy resources. It's kind of the blessing and the curse, you almost have so much of it you don't even know where to begin.

Now, we're limited in our time here this morning. We are scheduled to receive testimony from three panels of witnesses. I've been asked already if others may be allowed time to speak. Under the procedures of the Senate and how we operate field hearings, it's invited testimony, so those people who have been invited to speak today as part of these three panels will be the individuals that you will hear publicly. But I invite you all, the hearing record will remain open through September 12th, and any one of you is free to email or to write, to provide your statements, your comments, and those will be made part of the permanent record. The email address is *testimony@indian.senate.gov* and my staff will give you the mailing address after the hearing if you prefer to mail, you know, a hard copy. In addition, I will be available after the hearing for a little bit, I don't have to get on the jet until 2 o'clock, so I think I've got to be out of here by about 1 o'clock, I'll be available, my staff will be available and we will welcome your thoughts.

I want to recognize my staff that are with me from Washington, D.C. To my left I have Chuck Kleeschulte. Mr. Kleeschulte handles my energy issues back in Washington. To my right I have Megan Alvanna-Stimple. Some of you may recognize her and know her, her family is from Nome. Megan is working on the Indian Affairs Committee. We have Eamon Walsh to Megan's right. He is on Senator Dorgan's committee staff and we welcome him; this is his first visit to Alaska, so this is an eye opener for him, and he's going to have an opportunity to tour a little bit this afternoon. I also have Nathan Bergerbest, who is back in the corner. Many of you know Nathan. He handles my Indian Affairs matters and we greatly appreciate his assistance as well. We have a couple others that were supposed to be here but I guess they missed the plane; welcome to Alaska, right.

[Laughter.]

Senator MURKOWSKI. Now, I've mentioned a little bit about my experience yesterday going through the stores and just kind of appreciating what it is that you're paying here as families. I want to put some statistics in the record, again, so that not only—not so much for your benefit, but for the benefit of those who will be reading the record of this Senate proceeding. According to the Alaska Municipal League, Atka holds the record for the highest fuel price in Alaska, $8.95 for diesel, $8.65 a gallon for gasoline. When I went down to the gas station here, it was $5.99 or 98 cents, right about in there. But we recognize that all of Alaska is wobbling under record energy prices. Statewide average gasoline price is about $4.55 a gallon. For those of you here in Bethel you're probably thinking that that's a heck of a deal.

What I'm hoping that we gain from this hearing this morning is solid data on how these price increases, the startling price increases, how they're affecting average Alaskans and Alaskan communities. We hear about these energy refugees, those who flee the rural communities for the urban centers where the prices are lower

because they're, quite honestly, fearful that they're not going to be able to make it through the winter, they can't pay for the electricity, they can't afford the fuel for their vehicles or for their ATVs, they can't get to work, they can't do their subsistence hunting. The stories out there about what is happening are more than just stories, I mean they are real. I had a conversation with a gentlemen with the EPA, a sanitation engineer, who's been working on projects all around rural Alaska, and his observation that we have several communities where the individuals aren't able to pay for their water and sewer because they're having to pay more for their fuel and so their utility service is cut off and all the efforts that we have been attempting to make when it comes to putting the honey bucket in the museum, the old saying, we're going backwards on it, we're having communities that are recognizing that they're not able to pay for the systems that we have provided for them. Just last evening I heard that in the community of Tuntutuliak, the community well, the water service, has been shut down. Essentially you're told, well, you can buy your bottled water or you can get water from the river. This should concern us all in terms of how we are going backwards, instead of advancing insofar as providing, not only services, but for the health and sanitation needs of the people in the regional areas.

I want this hearing to produce, perhaps a true picture of how difficult things have become in rural Alaska, and better yet what the witnesses might suggest that we, at the federal level, might be able to do to help ease the energy costs.

I'd like to hear, not only from those from the individual perspective, but what is the impact on the businesses, on the health care systems, on the institutions themselves. We all know that energy is a key ingredient in the cost of health care in rural Alaska, keeping the village clinics and the hospital heated, the cost of medivacs from the villages, we are just hearing terrible horror stories about those costs. And while we're working in Washington to increase the funding for IHS, I'm very concerned that what we may be seeing are increases that are intended for health services will, of necessity, be diverted to energy costs. We know that rising energy costs are making it far more expensive for the entities from the local school districts, we heard some of that last night, to the YKHC to provide services to the clients, making it a huge challenge to provide existing services to those who need it.

I am hopeful that at this hearing we'll be able to provide information about what we, in Congress, should be doing to encourage the development of reliable, affordable domestic energy over the short-term and over the long-term. We know that we are extremely rich in renewable energy resources. We've got more than any other state out there. You look at the wind, you look at the potential through the ocean energy, the hydro-kinetic energy from our rivers. Look at what we have in the Southeast in terms of our hydro power and what is available there. We have incredible resources when it comes to geothermal and our ability to tap the potential from under the earth here. We've got the potential to do so much more when it comes to renewable energy resources, but what we need, what we lack is that necessary capital infrastructure to advance these projects.

Renewables offer us that, hopefully, lower cost alternative. And we recognize that when it comes to the sustainable energy out in rural Alaska, this is where the future is.

I do hope that we will hear this morning about the draft AVCP, Calista Regional Energy Plan * that emphasizes natural gas, wind, hydro, and biomass. All over the state we've been seeing efforts at the regional level to develop regional energy plans. I know in Northwest Alaska, in the NANA region, they recently have developed a plan. The Seward Peninsula has one. Southeast. The Aleutians, they're in the process of crafting one. And the Interior, Fairbanks, has just finished one. The Kenai Peninsula, along with the Mat-Su and Anchorage produced one last year that state administration, of course, is in the process of producing a new statewide plan that is likely to be finished this fall. So there's a lot going on, good and interesting concepts.

And, then, finally, I hope that we'll hear testimony on what Congress should be doing to help rural residents and Alaska Natives tap these energy sources that are located on their own lands, both to cut the power costs, but also as an income source for Native corporations and their subsidiaries.

We'll have an opportunity to hear from the representatives from both the Department of the Interior and the Department of Energy in what we can do to get on with funding the policy initiatives that were contained in the Energy Act that we passed several years ago to help fund the development of Indian Native Energy Projects on reservation lands and the Native-owned lands, little of which, quite honestly, we have funded, so I look forward to the updates from the two federal witnesses.

There are some initiatives out there. People have said, well, what is it that you can do to help, what is out there? We succeeded in winning approval for an Alaska Renewable Energy Deployment Grant Program for renewable energy projects for the state of Alaska in last year's Energy Independence and Security Act. Now, the problem is you get the authorization for it but we have not yet got the appropriation. We've got to fund it in order for this authorization to do anybody any good.

So I'm looking forward to the testimony of the individuals this morning for the establishment of a record as to what we're facing out here in terms of the economic, the social conditions that rural Alaska is facing caused by these high energy prices, and what the Federal Government can do to help alleviate the problems, both in the short-term and in the long-term.

I think we recognize there are no silver bullets. There are no quick and easy fixes. The Legislature wrestled with this in their special session not more than a month ago, so it's an initiative that we all must be engaged in together.

With that, and I apologize for taking more than my share of time here, but I would like to move to our witnesses and give you a brief overview of all of the panels and then we will move to the first panel.

We're joined this morning by Ralph Andersen. Ralph is the CEO of the Bristol Bay Native Association. He's the Chair of the Alaska

*The information referred to is printed in the Appendix.

Federation of Natives Energy Committee. Ms. Janie Leask, the President and CEO of the First Alaskans Institute on the Board of Trustees there. Mr. Mike Williams, appreciate you joining us here this morning, Mike, and your testimony as well. Mr. Chris Mello with the Alaska Energy Authority.

On our second panel this morning, we will hear from Myron Naneng who's President of the Association of Village Council Presidents. Matthew Nicolai, the President and CEO of Calista. Gene Peltola, President and CEO of Yukon-Kuskokwim Health Corporation. Ron Hoffman, CEO of AVCP Housing Authority and president of the Association of Alaska Housing Authorities.

And then on our third panel we have our federal witnesses, Mr. Steve Morello, whose Director of the Office of Indian Energy Policy and Programs out of the Department of Energy in Washington, D.C. And joining him is Mr. Bob Middleton who is the Director of the Office of Indian Energy and Economic Development in the Department of Interior.

Unfortunately, as you know, Senate protocol says we ask that you try to limit your testimony to five minutes. Your full statement will be included as part of the record so if you would like to supplement that through your oral testimony here this morning that's always most welcome.

And with that, Ralph, if we can start the first panel off with your comments and, again, thank you for joining us this morning.

**STATEMENT OF RALPH ANDERSEN, CEO, BRISTOL BAY NATIVE ASSOCIATION; CHAIRMAN, ALASKA FEDERATION OF NATIVES' ENERGY WORKING GROUP**

Mr. ANDERSEN. Good morning. Thank you Madam Chairman. I was sitting here, while listening to your remarks, that being the lead off speaker, I'm kind of the warm up for this distinguished group of panelists and for the whole other panels that will follow me. As you said my name is Ralph Andersen, I'm the CEO of the Bristol Bay Native Association. I'm here as the Chairman of AFN's Energy Working Group.

Thank you for holding this hearing today on the extremely important issue of high energy costs in rural Alaska. Alaskans, especially in our rural communities are experiencing an energy crisis unlike anything that we've seen in the past and it's not likely to improve in the short-term. While all Americans suffer from the rising costs of gas and home heating fuel, the impact is unbelievable in our rural communities, threatening the very survival of many of our villages. Most of our rural communities are not on any power grid, and are dependent on petroleum for three major uses; space heat, transportation and electricity. Heating fuel prices in some villages have gone as high as $11 per gallon. In the winter months a home can use between 220 or 275 gallons each month. This equals to about $2,400 to $3,000 per month per home. We simply can't afford to meet these prices now or over the long-term without help. Our regional village economies and everything else are affected by the high cost of fuel. Groceries, fresh milk, a dozen eggs, airline tickets, toothpaste, medicine, diapers, clothing, lumber and building material, car and truck parts, everything have gone up in price.

The State of Alaska Department of Commerce and Community and Economic Development expects the price of heating oil to rise from 30 to 50 percent this winter. It is entirely possible that thousands of our fellow citizens will not be able to pay their heating and electric bills this winter and still buy food and the other necessities of life without additional emergency relief. Making the situation worse is, for most families, is the price of gas is limiting their ability to gather food for the winter, to gather subsistence food. Now, with the high cost of gas fewer families can afford to hunt, fish, and gather subsistence food and pay their heating and electric bills at the same time. For some families it's become a choice between putting food on the table or heat and electricity in the home.

We encourage the state of Alaska to adopt a long-term energy plan, one that covers every region of the state which has an overall goal of equalizing energy costs for all Alaskans. We are hopeful that such a plan will be adopted before the end of the year.

While working to transition to alternative or renewable energy, that future is a long ways away. Until then coal and oil and natural gas will remain indispensable to meeting the total projected energy demand and Alaska is rich in those resources. We're going to need help during the period of transition.

Over the summer AFN's Energy Working Group met four times and had very productive meetings. We developed a matrix of short-term and long-term actions that could be taken by the state and Federal Governments by individuals and by private industry. A copy of that matrix is attached to my written testimony which I've submitted. I'd like to list, briefly, the top five recommendations that we came up with.

One, strengthening the Power Cost Equalization Program by fine-tuning its mission, adding more resources and expanding the eligibility requirements.

Two, buy down debt of rural utilities in order to reduce costs passed on to consumers, and include a price cap on fuel stock purchased prospectively, with a mechanism for reimbursement from the state for costs in excess of the cap.

Three, expand and support bulk fuel purchasing, transportation and cooperative purchase agreements and contribute to the Denali Commission's bulk fuel storage program in order to eliminate the storage backlog and to complete rural upgrades.

Four, provide a family fuel subsidy to help meet the immediate crisis.

Five, make a sizeable investment in projects that promote renewable or alternative energy and conservation efforts.

The Legislature also, at the special session, suspended the state's motor fuels tax for a year and increased the bulk fuel revolving loan fund and bridge loan program funding. All of the steps will help with the immediate crisis, but fall far short of what is needed for the long-term.

Turning to viable sustainable energy solutions. AFN and its member organizations are strong supporters of the development of alternative energy resources as an important addition to our country's fossil energy resources. Many villages in rural Alaska are actively working to develop a wide array of alternative and renewable energy projects.

Alaska is so large and diverse that one village's alternative resources may not be available elsewhere. There's no one size fits all solution for rural Alaska. There's no cookie-cutter approach. Making local solutions more specific and more expensive. Because of the vastness of Alaska and its virtually unlimited potential Alaska can be a model for the rest of the country. Our communities could be part of a national demonstration project on alternative energy technologies. We could serve as a proving ground to show our rural Alaska Native people and our institutions have the experience, capital and partnership to effectively implement workable solutions to the energy crisis. Investing now in renewable energy development will bring down energy costs and create jobs.

In terms of what Congress can do to address the energy crisis we have the following suggestions, and there are nine.

One, provide significant increases in the needs-based Low Income Home Energy Assistance program, the LIHEA program and urge the state to add its own additional appropriations for this program.

Two, increase funding for the Denali Commission.

Three, enact a comprehensive energy bill to decrease energy demand over the long-term and increase energy efficiency.

Four, fully fund and implement the Energy Independent and Security Act of 2007, which was authorized in 2006.

Five, provide incentives and funding for the creation of regional energy authorities in Alaska.

Six, increase the supply of energy by encouraging exploration and development of private, state and federal lands both on shore and off shore.

Seven, work closely with the state of Alaska to ensure that in the development of a natural gas pipeline our communities have access to the natural gas that will pass through the pipeline.

Eight, provide consumers with energy rebates and economic incentives to conserve energy.

Nine, enact and fund Senate Bill 2232, the Native American Challenge Demonstration Project to help us meet our energy needs. We request that the committee mark up this bill when it returns as part of the strategies to address the energy crisis in rural Alaska.

Thank you for the opportunity to testify today Madam Chairman.

Again, the high cost of energy is an enormous issue for us. We want to be part of the solution. We look forward to working with both Congress and the state to address the issue.

[The prepared statement of Mr. Andersen follows:]

PREPARED STATEMENT OF RALPH ANDERSEN, CEO, BRISTOL BAY NATIVE ASSOCIATION; CHAIRMAN, ALASKA FEDERATION OF NATIVES' ENERGY WORKING GROUP

Good Morning. My name is Ralph Andersen. I am the Chief Executive Officer of the Bristol Bay Native Association (BBNA), and Chairman of the Alaska Federation of Natives' Energy Workgroup. I also serve as Co-Chair of AFN's Human Resources Committee composed of the Chief Executives of the 12 regional non-profits. BBNA is a non-profit tribal consortium that provides vital services to over 30 rural villages in southwestern Alaska. Today, I am testifying on behalf of AFN, as Chairman of the Energy Working Group. AFN is a statewide Native organization whose membership includes over 200 villages and tribes, 13 regional Native corporations and 12 non-profit tribal consortia, including BBNA, that contract and run federal and state programs.

I know many of AFN's member organizations would like an opportunity to provide testimony on how the high fuel prices is impacting them, so I request that the record be kept open for a period of time to allow our tribes and corporations and interested individuals to provide additional written comments.

Alaska Natives are committed to working with the State and the federal governments, as well as private sector partners, to help meet the energy needs of Alaska and the nation. As major landowners, we have resources that can be developed. As owners of major corporations, we have the management capacity and organizational reach to work with the state and federal governments and private sector investors to create new sources of energy. Our federally recognized tribes, our regional housing authorities, our regional tribal consortia all have a strong interest in being part of the solution of obtaining affordable energy—to maintain our unique way of life and to help meet our national energy needs.

The rising cost of energy has reached unprecedented proportions in rural Alaska. While all Americans suffer from the rising cost of gasoline, the impact is unbelievable in our rural communities, threatening the very survival of many remote villages. Rural Alaska has the highest per capita power and fuel costs in the U.S.

Most of our rural communities are not on any power grid and are dependent on petroleum for three major uses—*space heat* (homes, public buildings and businesses); *transportation* (aircraft, snow machines, outboard motors, four-wheelers); and *electricity* (lighting and appliances). Fuel oil prices in some villages have gone as high as $11 per gallon; and in the winter months, a village home can use four or five 55-gallon drums of oil for heating each month. This equals $2,000 per home/per month in Arctic Village, $1,650 in Hughes, and $1,375 in Illiamna. These prices cannot be met—now or over the long term. Just as significantly, everything in our villages is affected by the high cost of fuel, even more so than in our cities because of the economies of scale of serving remote locations. Groceries, toothpaste, medicine, diapers, clothes, lumber, automobile and truck parts—*everything*—has gone up in price. This is devastating to individuals and small businesses; especially when wages have not gone up in decades. As an example, air cargo prices in one area jumped another 32 percent in June after previous increases.

According to a recent study by UAA's Institute of Social and Economic Research (ISER), people living in remote, rural communities are paying about 41 percent of their annual incomes on home energy use, compared to about 4 percent paid by people living in Anchorage. The State of Alaska's Department of Commerce, Community and Economic Development expects the price of heating oil in remote villages to rise from 30–50 percent this winter. It is entirely possible that thousands of our fellow citizens will not be able to pay their energy bills this winter and still buy food and the other necessities of life without additional emergency relief. Making the situation worse is the fact that for some families, the price of gasoline is actually limiting their ability to gather food for the winter. Rural families depend on subsistence, and under normal circumstances they are able to put away fish, berries, moose, caribou and other resources to meet their food needs throughout the winter.

We have encouraged the State of Alaska to adopt a long-term energy plan—one that covers every region of the State and which has an overall goal of equalizing energy costs for all Alaskans. We are hopeful that such a plan will be adopted before the end of the year.

In its recent Special Session, AFN also encouraged the Alaska Legislature to take steps to stabilize energy costs and provide immediate relief to individuals, families and communities who are the hardest hit by high energy costs. We believe a multifaceted approach must be taken—one that provides reliable, sustainable and affordable energy to all Alaskans; encourages conservation; and promotes economic development opportunities in the process. We also need to continue to invest in conventional oil and gas while working to transition to a low carbon future. That future is many years away—until then, coal, oil and natural gas will remain indispensable to meeting the total projected energy demand. And, Alaska is rich in those resources.

Over the summer, AFN's Energy Workgroup met to identify various options for addressing the energy crisis in Alaska. We developed a matrix of short-term and long-term actions that could be taken by the state and federal governments, by individuals and by private industry. A copy of that matrix of ideas is attached.

Today, I would like to briefly cover the recommendations that emerged as our top five recommendations for the State's Special Session and then focus on what we believe Congress can do to address the energy crisis.

1. *Strengthen the Power Cost Equalization Program by fine-tuning its mission, adding more resources and expanding the eligibility requirements.* Additional funding is critically needed to cover the short-fall expected this year. While the Alaska legislature increased the ceiling for entitlement for the program from 52.5 cents to

$1.00 per kWh, it did so for only one year. It also failed to make schools, health clinics and businesses eligible, as the PCE program was originally designed, and it did not address the need for increased funding for PCE. Making schools, health clinics and businesses eligible is important because it will focus energy help where it is needed, help keep down inflation, and ensure that health and education funding goes to those purposes. According the Alaska Native Tribal Health Consortium, as much as 33 percent of village health clinic funding is going to pay for electricity and increased fuel costs. Our hospitals and schools are places of refuge for people in the villages. We need to ensure that the infrastructure we've invested in (our schools, clinics, hospitals) is maintained. Costs for everything from rubber gloves to patient travel, to medivacs have increased. These increases threaten the ability of our health care providers to deliver much needed services. As people move in together to save costs, there will be huge public health ramifications.

2. *Buy down debt of rural utilities in order to reduce costs passed on to consumers—and include a price cap on fuel stock purchased prospectively, with a mechanism for reimbursement from the State for costs in excess of the cap.* Most rural utilities generate their power with diesel fuel. According to the Alaska Energy Authority, the cost of diesel fuel for most of these, even at 2007 prices, amounted to close to 50 percent or more of the cost of providing power. With the increase in fuel prices in 2008, rural utilities will find it difficult to operate and maintain power plants, tank farms and distribution lines—not to mention their insurance, interest on long-term debt, taxes and general administrative costs. The Alaska Village Electric Cooperative (AVEC), for example, serves 53 villages in rural Alaska, communities that have the lowest per capita cash incomes in the State. Because of the historically high cost of power, residents and businesses in these communities have been conserving power for many years, resulting in extremely low electricity consumption. AVEC purchased fuel for its power plants at an average cost of $1.29 per gallon in 2002. In 2007, it paid $2.93. Its 2008 deliveries will be at least $4.60 per gallon (based on the L.A. Platt's Fuel Price Index as of May 13, 2008, reporting crude oil prices at $132.57).

Because of these considerations, we advocated for a program that would give relief directly to utility companies. We also proposed capping the price of fuel purchased prospectively by electric utilities (AVEC has suggested a cap of $10.00 per million BTU, which would translate to a price of about $1.30–$1.45 a gallon for various fuels, depending on their BTU content.) The fuel supplier would charge the utility the mandated price and bill the State for the balance.

3. *Expand and support bulk fuel purchasing, transportation and cooperative purchase agreements—and contribute to the Denali Commission's bulk fuel storage program, in an effort to eliminate the storage backlog and to complete rural upgrades.* Communities across Alaska are faced with the costs of storing fuel, once it arrives. Fuel tanks are expensive to buy and to maintain—and have to meet stringent government environmental regulations. Many fuel tanks in Alaska are not large enough or are in need of upgrades. Federal funds available for the Denali Commission's energy programs totaled about $23 million for FY 2008, a significant decline from previous years. We encouraged the State to step up as a true partner with the federal government in funding for the Denali Commission's bulk fuel storage program. Being able to store more fuel should help stabilize consumer fuel prices. In addition, we recommended that the State provide grant funding to create bulk-fuel co-ops that combine purchases for utilities, schools, the state (for state facilities) and private businesses, so that individual communities, clusters of communities and/or regions can create economies of scale. A total of $211 million are needed to complete the backlog of bulk fuel storage tanks, which are old and unsafe; while $198 million are needed to complete small electrical generation upgrades.

4. *Provide a family fuel subsidy to help meet the immediate crisis.* The State Legislature voted to provide a "resource rebate" of $1,200 per person to be added to the 2008 permanent fund dividend payment. The rebate will provide much-needed relief to families and individuals, but as a recent ISER study points out, for about half of the remote rural households, increased home-energy costs since 2006 will far outweigh the energy rebate ($3,300 for the average-size household).

5. *Make a sizable investment in projects that promote renewable/alternative energy and conservation efforts.* The Legislature created a Renewable Energy Fund last year to be housed in the Alaska Energy Authority and provided $50 million in funding. During its recent Special Session, the Legislature added another $50 million to the fund bringing the total available for spending on energy projects this year to $100 million.

The State Legislature also suspended the state's motor fuels tax for one year, and increased the bulk fuel revolving loan fund and bridge loan program funding. All

of these steps will help with the immediate crisis, but fall far short of what is needed for the long term.

Turning to viable sustainable energy solutions, AFN and its member organizations are strong supporters of the development of alternative energy resources as an important addition to our country's fossil energy resources. Many villages in rural Alaska are actively working to develop a wide array of alternative and renewable energy projects. They see not only the potential for reducing the cost of energy, but also the tremendous manufacturing, sales and service components (e.g., the fact that wind and solar energy will need tailored products, services and alternative building materials; and the fact that plans and supplies for hybrid homes and facilities that are now being developed and manufactured abroad could be developed and manufactured in Alaska. Our larger cities are doing the same.

Alaska is so large and diverse that one Village's alternative resources may not be available elsewhere. Some areas have strong wind for electrical generation; others can look to geothermal resources. There is no "one-size-fits-all" solution for rural Alaska, making local solutions more specific and expensive. Because of the vastness of Alaska and its virtually unlimited potential, Alaska can be a model for the rest of the country. Our communities could be part of a national demonstration project on alternative energy technologies. We could serve as a proving ground to show how Alaska Native people and their institutions have the experience, the capital and the community relationships that will be necessary to effectively implement workable solutions to the energy crisis. Investing now in renewable energy development will bring down energy costs and create jobs.

The undeveloped energy sources most often discussed for rural Alaska are small hydro power (using rivers to provide power to small communities), solar energy, sea wave action, biomass, coal, methane and geothermal:

**Wind:** Alaska has world-class wind energy resources, especially along the coastal and western regions of our state. There are 31 rural Alaska communities that already have good opportunities for wind generation—and 17 more that are "potentially attractive." There are at least seven projects currently operational and another eight in the planning stages. Congress needs to look at ways to provide incentives to wind developers and to train our citizens to maintain the windmills.

**Hydro:** Existing hydro generation produces nearly 25 percent of the state's electricity. But Alaska also has almost 45 billion watts of large and small hydro potential, more than any other state.

**Solar:** Summer in Alaska produces a huge amount of sunlight, but winter darkness is the time of greatest energy demand. Small-scale solar projects have great potential, especially if combined with other sources of energy to lower the overall cost. Because the homeowner or community must make up-front capital investments, the federal or state governments should provide incentives.

**Ocean Wave Action:** Alaska has over 34,000 miles of coastline, and some of the highest tides in the nation making it one of the best ocean energy resources in the world.

**Geothermal:** A recent study points out four potential geothermal areas in Alaska: interior hot springs, southeast hot springs, the Wrangell Mountains, and a combination of the Alaska Peninsula and the Aleutian Chair. The value of geothermal power is magnified by the fact that it can produce both heat and electricity. Large-scale geothermal electric power generation projects have been proposed that would provide power to Unalaska, and Akutan. Naknek Electric Association is actively investigating geothermal potential and the development of a regional electrical transmission system.

**Biomass:** Alaska has a great amount of wood, wood waste and sawdust for potential use in space heating and electrical generation. A few villages have begun to talk about making wood pellets from plentiful willow brush. Alaska's fish processing plants produce about 8 million gallons of fish oil each year. With some chemical changes, this oil can be mixed 50–50 percent with diesel for generation. Community waste disposal produces 650,000 tons of garbage in Alaska each year that could be used to generate electricity. But, again, design and capital costs are expensive and need public incentives.

**Coal:** Coal is abundant in Alaska, but has higher $CO_2$ emissions than other energy sources. However, coal can be used to produce synthetic "natural" gas with and without carbon capture. The problem is that these gasification technologies are expensive and still under development.

In terms of what Congress can do to address the energy crisis, we have the following suggestions:

1. *Provide significant increases in the needs-based Low Income Home Energy Assistance (LIHEAP) program and urge the State to add its own additional appropriations for this program.* Currently, the only energy aid program Congress has estab-

lished is LIHEAP. It provides aid to residents whose income is at or below 150 percent of the federally defined poverty level. That program provides approximately 13,880 qualified Alaskan households with about $730 a year to buy fuel. That, at best, only covers about one winter month's supply of fuel for a typical home at current prices. In many of our villages, it does not even cover one-month's cost.

2. *Increase funding for the Denali Commission.* The congressionally created Denali Commission and the Alaska Energy Authority recently awarded $5 million for alternative/renewable energy projects ($4 million from the Denali Commission and $1 million from AEA. While this was a good start, it only provided funding for 33 projects out of a total of some 96 proposals. Congress should increase funding to the Denali Commission for its energy projects and make a sizeable investment in developing alternative/renewable energy projects.

3. *Enact a comprehensive energy bill to decrease energy demand over the long term and increase energy efficiency.* As a part of that bill, Congress needs to extend the investment tax credit for installing solar energy, the production tax credit for producing wind power as well as the credits for geothermal, wave energy and other forms of renewable energy. These critical renewable energy tax credits are set to expire at the end of this fiscal year and, if they do, it will mean thousands of jobs lost and billions of dollars of investments not made.

4. *Fully fund and implement the Energy Independence and Security Act of 2007, which was authorized in 2006.* That bill includes a host of provisions to further renewable energy development, including a renewable energy deployment grant program that would provide federal grants for up to 50 percent of the cost of building a wide variety of renewable electricity projects, including wind, geothermal, ocean, biomass, solar, landfill gas and hydroelectric projects in Alaska. It provides for a federal grant program specifically to help with construction of geothermal energy projects in areas of high electricity costs like rural Alaska.

5. *Provide incentives and funding for the creation of regional energy authorities in rural Alaska.*

6. *Increase the supply of energy by encouraging exploration and development of private, state and federal lands, both onshore and off-shore.* This can be done by providing incentives, such as OCS revenue sharing for Alaska's coastal communities, as has been done for Florida, Louisiana and Texas. AFN supports the right of self-determination for our Native communities and urges that leases which have generated a lack of widespread community support be revisited, and discussions opened up with affected communities to address their concerns.

7. *Work closely with the State of Alaska to ensure that in the development of a Natural Gas Pipeline in Alaska, our communities have access to the natural gas that will pass through that pipeline through spur connections;* and that ownership, partnership and contracting opportunities for Alaska Native tribes and corporations are part of the development plans. Serious training funds should be appropriated for workforce development to ensure broad Native participation in the projects.

8. *Provide consumers with energy rebates and other economic incentives to conserve energy.* Congress should provide homeowners with incentives to shift to supplemental alternative energy, including rebates, tax credits, low interest loans, and grants to weatherize homes and install energy saving changes.

9. *Enact and fund S. 2232, the Native American Challenge Demonstration Project Act.* This bill would create a total of five pilot projects in remote, predominately Native American areas modeled after lessons learned from the U.S. experience in providing foreign aid to the developing world. The project would use a compacting model to channel significant development funds to implement locally designed economic development strategies, including energy strategies. The objective would be to enhance the long-term job creation and revenue generation potential of Native economies by creating investment-favorable climates and increasing Native productivity.

We thank you for the opportunity to testify today. This is an enormous issue for us. We want to be part of the solution and look forward to working with both the Congress and the State of Alaska to address this issue.

Senator MURKOWSKI. Thank you, Mr. Andersen, I appreciate, not only your testimony but your leadership. AFN, in their efforts to truly shine the spotlight in all corners of Alaska on this issue, I think has been very helpful, and the matrix that you've provided shows the level of detail that you're going to, which we greatly appreciate.

Just for the interest of not only the witnesses, but those participants, typically what we do in a Senate hearing is each of the panelists will give their five minute presentation and at the conclusion of the presentations I will then ask questions of all of the witnesses at that time.

So with that, Janie, we will go to you, welcome to the Committee.

**STATEMENT OF JANIE LEASK, PRESIDENT/CEO, FIRST ALASKANS INSTITUTE**

Ms. LEASK. Thank you. For the record I'm Janie Leask. I'm President and CEO of First Alaskans Institute. It's a statewide Native non-profit which houses the Alaska Native Policy Center. I testified in Juneau on the $1,200 rebate and the energy issues there, and one of the things that I will cover today is a little bit of research that the staff has done in the Policy Center really taking a look at seven villages and comparing them to the cost of Anchorage on a number of different levels. We really used Anchorage as a baseline.

But first, I would like to thank the Anchorage legislators who are here today and thank you for inviting them. As we know, rural Alaska does not see legislators out in the rural areas very often, and I think that it's something, especially since the state does have a little bit more money, that it would be nice to have rural legislators go to more villages to really see first-hand what's happening, so I really appreciate your invitation to them and for them coming today.

Our Alaska Native Policy Center collected information and we researched the cost of fuel/gas/energy consumption and cost of goods in the villages of Emmonak, Elim, Grayling, Kiana, Old Harbor, Stebbins and Togiak and these were just randomly selected from around the state. We looked at the consumption overall of energy in rural Alaska. Rural Alaska consumes less energy, while paying more for that energy. I think those of us who have been around and on top of that topic, it's kind of a no-brainer. But over the three year period that we tracked these communities, we were able to get some data on them from 2005 to 2007, on an average monthly usage, the seven villages surveyed consumed less energy than Anchorage. Anchorage households used more than 500 kilowatts of electricity while rural households range from 280 to 430 during that same time period. Rural residents, as I said, also pay more per kilowatt hour than Anchorage residents do, even with the current rate of PCE (power cost equalization), rural households in these seven communities paid anywhere from 19 to 30 cents per kilowatt hour, well above the 9 to 10 cents that Anchorage residents—Anchorage households pay. In some cases the average monthly bill for electricity in rural Alaska is twice that of Anchorage. And without power cost equalization, the villages that we sampled would pay in the range of 50 cents per kilowatt hour, which is absolutely incredible.

According to the Division of Community and Regional Affairs, the Director's report, the average statewide price for heating fuel #1, the heating fuel used to heat homes, in June of this year was about $5.51 per gallon with prices for heating oil ranging from $1.30 to over $9 per gallon.

The seven communities are paying more than the average price, the average price for a gallon of gas was $5.35 at the time that we did this study, and, again, the seven communities are above that average with prices ranging up to $8.35 per gallon for gas. I'm sure that has probably come down some with the decrease in gas prices.

We then took a look at what the USDA and the University put together, a marketbasket of goods, and we sent a list out, faxed a list out to the villages and asked them, could you please go to the grocery store and take a look at these goods and we compared them with Anchorage, and we were able to get a majority of the villages returning our faxed list. Then we compared the cost of food and non-food items to the same ones in Anchorage. We found that it cost between $69 and $120 more to buy the same basket of goods in the communities that did respond over Anchorage. Results published by the Department of Labor and the University of Alaska—Fairbanks also paralleled these findings.

Just as an aside, I met with a group of outside funders that traveled to Alaska at the invitation of the Rasmuson Foundation. They flew from Seattle out to Bethel and then out to—traveled to some of the communities and were just shocked at the prices that were in the stores. I'm always really glad that outside funders and outside public policy makers and people who contribute to our state are able to do that and really see what the real prices are.

We also took a look at travel. The average airfare prices, beginning in July 2008, we found the average roundtrips between Anchorage and the seven communities ranged between $709 from Stebbins to $1,220 from Elim.

Senator MURKOWSKI. From Elim to Anchorage?

Ms. LEASK. From Elim to Anchorage, roundtrip. One of our staff members is a recent—came into Anchorage, moved his family last fall, about a year ago and he's from Mekoryuk, and he was saying that a roundtrip for him to go into Anchorage from Mekoryuk was well over a thousand dollars, for one person, not the entire family, just one person. He cut back his subsistence, he was going to go out, his mother asked him to come out to the village to help her with gathering fish for her fortunately he had an older brother living in the village. He just couldn't pay the price for an airline ticket to go out to help his mother gather food for the wintertime. So the increasing cost of flying in and out of rural Alaska really hinders rural residents ability to come in, as you had mentioned for services, and also for shopping, for a lot of other trips and for health. It makes the cost of doing business in rural Alaska even more expensive.

I had the, I don't know if it was privilege, but when I was on the board of Commonwealth North we did an urban/rural study, and one of the things that we came out with was the inter-dependency of rural Alaska and urban Alaska in our state. One of the things that the report stated is that, and it's a quote, "a basic element of the envisioned social and economic partnership between urban and rural Alaska is the recognition of people's right to support their families in the manner they choose and in the location of their choice." It further said, "likewise, an equally important goal is to foster understanding of the economic, political and social inter-dependence of rural and urban Alaska, so that all Alaskans

truly understand that Alaska's future depends on cooperation between urban and rural Alaska." I think that this just points out that Anchorage is Alaska's largest port, it's the gateway to shipping goods to rural Alaska, a healthy economy of rural Alaska bodes well for urban Alaska and I think that we know that. The cost of subsistence gathering and people are making choices of whether or not that they can afford to go out and go fishing or whether or not they can afford to fuel up their ATV to go out subsistence hunting and collecting berries. As store bought food becomes more unaffordable and subsistence becomes more expensive and out of reach for the local people, you have to ask the question, okay, what's left? It's a really tough question. I hear around in conversations and I read in the Anchorage paper people saying that rural people have a choice, you know, what if they just pack up their bags and move if it's too expensive. The response that I say is, yes, we do have a choice, but, yes, we choose to live in our homelands and where our grandparents grew up and this doesn't mean that we're not interested in cost savings, in doing what we can in rural villages to make life affordable. Out-migration is very real, we're seeing it, I talked to people who serve Alaska Natives in Anchorage and the infrastructure there is bulging at the seams and, you know, quite frankly I think it's going to get even worse once the Permanent Fund and the Energy Rebates come out and hit. I think people may use that money to move, we've also heard that, although that's not a statistic that we can prove at this point in time. But in the long-term, I thought the rebate was necessary in order to address what happens at the first freeze, but at the same time is not a long-term solution and I think that we, as Alaska Native people, state of Alaska and certainly the Federal Government, we all need to work together in collaborating and come up with some long-term solutions. I've got some ideas that I jotted down and I'll wait until the rest of the panel has spoken.

Thank you.

[The prepared statement of Ms. Leask follows:]

PREPARED STATEMENT OF JANIE LEASK, PRESIDENT/CEO, FIRST ALASKANS INSTITUTE

Thank you for the opportunity to testify at today's field hearing regarding the effects of the energy crisis on Alaska people, especially in rural Alaska.

My name is Janie Leask. I'm President/CEO of First Alaskans Institute, a statewide Alaska Native 501(c)(3) non-profit organization whose mission is to *advance Alaska Natives through community engagement, information and research, collaboration, and leadership development.* First Alaskans has three major focus areas–leadership development, community investments and public policy research for, and on behalf of, Alaska Native Peoples through the Alaska Native Policy Center. I'm here today to provide testimony on the effects of high energy costs on the Alaska Native village lifestyles and Native institutions in light of the current energy crisis.

In light of the energy crisis in rural Alaska and its detrimental effect on the well-being of rural residents, Native and Non-Native alike, households, and key infrastructure, FAI is on record advocating assistance—be it state or federal—by the "First Frost" (winter freeze up).

When I refer to "rural" in this testimony, it's important to recognize the term "rural Alaska" encompasses both Native and non-Native people with non-Natives making up the majority (60 percent) of the population.

It's imperative that we as a state make the investment in short-term aid while looking for long-term solutions to our current situation because our communities will be facing immediate problems once the first frost occurs.

I'd like to take some time to speak to this crisis, and the information First Alaskans has put together. We've collected and analyzed data and information from

seven villages across the state. This data describes the state of economic conditions in rural Alaska and provides a comparison to urban Alaska, using Anchorage as a baseline.

Through our snapshot we have verified the obvious for those familiar with rural Alaska—economic conditions in rural Alaska are under-developed while the cost of living is high.

**Economic Conditions in Rural Alaska Are Under-developed**

Rural Alaska is largely remote, disconnected from the road system, and faces extreme and changing environmental conditions. Villages in rural Alaska have an underdeveloped cash economy and a high unemployment rate—May 2008 Department of Labor data shows that 17 out of 27 Boroughs and Census Areas have unemployment above the state average of 6.7 percent, and with some like the Wade Hampton Census Area, it's as high as 22.6 percent.

The Median Household Income for these seven communities surveyed is well below that of Anchorage and the state average. Conditions are compounded by the high cost of energy, transportation, and the high cost of living.

**The Cost of Living in Rural Alaska Is High**

The staff of our Policy Center researched the cost of fuel, gas, energy consumption, and cost of goods, in villages of Emmonak, Elim, Grayling, Kiana, Old Harbor, Stebbins, and Togiak. These communities were randomly selected and are located in various regions of the state. Although each community is different in its traditions, culture, and environment, they all share the same issue of the current energy crisis, which is creating a real sense of uncertainty for the coming winter.

According to the data we collected, rural Alaska consumes *less* energy while paying *more* for that energy. Over a three-year period from 2005–2007 on an average monthly usage, the seven villages surveyed consumed less energy than Anchorage. Anchorage households used more than 500 kWh, while rural household usage ranged from about 280 to 430 kWh during that same time period.

Rural residents also pay *more* per kWh than Anchorage residents. Even with the current rate of PCE, rural households in the sample communities pay from 0.19 to 0.30 cents per kWh, well above the 0.09 to 0.10 cents that Anchorage households pay. In some cases the average monthly bill for electricity in rural Alaska is twice that of Anchorage. *Without* PCE, the villages sampled would pay in the range of 0.50 per kWh.

According to the Division of Community and Regional Affairs, Director's report—the average statewide price for heating fuel (#1)—the heating fuel that's used to heat homes—in June of this year is $5.51 per gallon with prices for heating oil ranging from $1.30 to $9.10 per gallon ($3.36 without the North Slope subsidy to residents). According to our recent survey, all the seven communities are paying more than the average price. The average statewide price for a gallon of gas is $5.35, and again all seven communities are above the average with prices ranging from $3.45 to $8.35 per gallon.

First Alaskans Institute looked at the USDA and UAF basket of goods and compiled an abbreviated list using goods (food and non-food items) that are commonly consumed in rural Alaska and asked the seven communities to price the abbreviated basket of goods. Four of the seven villages responded with prices and quantities for goods. We then compared the cost of food and non-food items to the average cost of the same items in Anchorage and adjusted the basket of goods for missing items. We found that it cost between $69 and $120 dollars more to buy the same basket of goods in the four responding communities than it does in Anchorage. Results recently published by the Department of Labor and the University of Alaska Fairbanks parallels these findings.

Having noted these price differentials, it's important to acknowledge that the purchasing power of $1,200 in rural Alaska is not the same as $1,200 in urban communities.

The Policy Center also looked at the cost of getting to and from the seven villages surveyed. Staff looked at a "snapshot" of airfare prices at the beginning of July 2008. We found that roundtrips from Anchorage to the seven communities ranged between $709 (Stebbins) to $1,220 (Elim).

The increasing cost of flying in and out of rural Alaska hinders rural residents' ability to come to urban areas for services, makes the cost of doing business in rural Alaska more expensive and could potentially impact the long-term economy of urban Alaska.

**The Human and Cultural Importance of Rural Alaska**

Rural Alaskans add rich diversity to the fabric of the state of Alaska. In 2000, the U.S. Census reported that the population of the rural areas was comprised of

about 60 percent White alone and in combination with other races. The Census showed about 38 percent Alaska Native alone and in combination with other races, and about two percent was made up of other racial combinations.

We have learned that migration to and from rural areas is not a one-time event. Rather, migration is a *process* in which people move at different times and for different reasons, and it is often a reoccurring event in the life of Alaskans. Alaska Natives living in rural areas live on lands defined as theirs by their ancestors, histories and deep cultural roots. In rural Alaska, residents use both ancient traditions and the more modern ways of living in their daily lives. This is true for Alaska Native and non-Native alike. Each community has seasonal subsistence gathering, and for this, residents use tools and motorized vehicles as well as traditional means of hunting and gathering.

As the energy crisis continues to escalate, rural residents are increasingly unable to sustain themselves by subsistence activities alone. For some families, the price of gas is cost-prohibitive and precludes the gathering of food. Rural families depend on subsistence. Under normal circumstances, a family can store fish, birds, berries, caribou, moose, reindeer, and much more for their livelihood. Every seasonal activity and food gathering is tied to the fact that people need to live and survive. As store-bought food becomes unaffordable and subsistence becomes more expensive and out of the reach of local people—what is left?

Items such as freezers, four wheelers, out-board motors, and store-bought goods, purchased in urban areas for a fairly decent price, *can* be shipped to rural Alaska. But these items are flown and barged in at an extraordinarily high price because the cost of fuel it takes to ship them.

We've heard over the years how rural and urban Alaska remain dependent on each other. Commonwealth North—a statewide public policy "think tank"—published the "Urban Rural Unity Study" in 2000. As part of that study, they described an "ideal" Alaska and cited a number of characteristics of that society which would honor and respect the diversity of its people and recognize the many areas where urban and rural interests coincide.

The report stated:

> "A basic element of the envisioned social and economic partnership between urban and rural Alaska is the recognition of people's right to support their families in the manner they choose and in the location of their choice. For this reason, one of the goals is to encourage the economic viability of the smaller 'rural' locations in Alaska and to maintain the diversity of cultures and lifestyles in the state. Likewise, an equally important goal is to foster understanding of the economic, political, and social inter-dependence of rural and urban Alaska, so that all Alaskans truly understand that Alaska's future depends on cooperation between urban and rural Alaska."

Anchorage is Alaska's largest port and is the gateway to shipping goods to rural communities. Anchorage, Fairbanks and other major hub communities are also the headquarters of a number of businesses and corporations which provide goods and/or services to rural Alaska. The healthy economies of urban and rural Alaska are inter-dependent.

I've heard such statements as "why don't rural residents just leave their villages . . . they have a choice of where they want to live." Yes, we have a choice—we choose to remain in the lands of our ancestors which doesn't mean we're not interested in living smarter through alternative forms of fuel, winterizing and/or upgrading housing which is better suited for the conditions found in our communities, and making better use of the resources we have. But this will take time—which is why we support a short-term "fix" while also supporting an accelerated look for sound, practical and affordable energy alternatives for all communities of our state.

In the short term, I don't think any rural hub—whether it's Bethel, Anchorage, Fairbanks or the Valley—is prepared for a mass influx of rural residents and the subsequent impact on their community's infrastructure. And rural residents don't want to leave their homelands. So we need to work together—across party lines and with all Alaskans at the table.

First Alaskans Institute is among several Native organizations that are in support of the recently passed "Alaska Resource Rebate Program."

In addition to the testimony I've offered today, I also want to voice our support of the Alaska Federation of Natives' top 5 priorities:

> 1. Strengthen the Power Cost Equalization Program by fine-tuning its mission, adding more resources and expanding the eligibility requirements;

2. Buy down debt of rural utilities in order to reduce costs passed on to consumers and include a price cap on fuel stock purchased prospectively.

3. Expand and support bulk fuel purchasing, transportation and cooperative purchase agreements.

4. Provide a family fuel subsidy to help meet the immediate crisis.

5. Make a sizeable investment in projects that promote renewable/alternative energy and conservation. The high cost of fossil fuel is not going to go away. We need to start investing in alternative/renewable energy now.

Based on the evidence we found, we believe there is compelling evidence that families in rural Alaska need the additional monetary income to offset the increasingly high cost of energy and its subsequent impact felt at the local level.

We also believe by working together to make this a better state, we will improve our collective future. Again, I thank you for the opportunity for this testimony and urge you, Senate Committee on Indian Affairs, to provide energy assistance or a similar piece of action which will provide a much-needed short-term solution to the energy crisis facing our state.

Senator MURKOWSKI. Okay, thank you, Janie. And next we will turn to Mike Williams. Mike is currently the Chairman of the Alaska Inter-Tribal Council, along with many other notable distinctions, but we're pleased to have you with us this morning, Mike.

**STATEMENT OF MIKE WILLIAMS, CHAIRMAN, ALASKA INTER–TRIBAL COUNCIL**

Mr. WILLIAMS. Senator Murkowski, I'd like to welcome you to our homelands here and the other staff, welcome home Megan, I know I met you over there, and Chuck. And welcome, finally, to you Mr. Walsh to our lands. I live 30 miles in a small village with my family, my grandkids and my dogs as well——

Senator MURKOWSKI. Your dogs.

Mr. WILLIAMS.—in the village of Akiak. I'd like to thank Asa'carsarmiut Native Council for allowing us to do business today in their land here in Bethel.

Again, my name is Mike Williams, I'm currently the Chairman for Alaska Inter-Tribal Council, which is a consortium of federally recognized tribes from throughout Alaska, and there's 229 federally recognized tribes. And I also am the area Vice President for the National Congress of American Indians and also president for our school district board of education. And also vice chair of the Rural Community Action Program, which provides a lot of services out in rural Alaska. And this area, of course, is the poorest of the poor in the nation per capita. And I agree with some of the comments that Janie and Ralph have made.

You know I just have a few comments and I'll make my comments short.

We have sustained ourselves here in rural Alaska for thousands of years. I remember as a child growing up in a small village, we had only two or four hours a day of electricity with no other appliances that we have today. We did not have electricity in the summer months. We utilized our ways of preserving fish, game and what we gathered throughout the summer. I remember we had a small windmill in Akiak to provide electricity to our small hospital. Times have changed very quickly. When we have all the appliances that we have in our communities and our homes, our villages are providing electricity and oil and gas for motors and snowmachines to engage in subsistence activities. We have over 200 tribal commu-

nities throughout Alaska that are experiencing problems of providing sustainable power fuel to our members, or having that access to conduct these activities in each community.

I wanted to make a few recommendations and these are not all the recommendations, the resolutions that Inter-Tribal Council had and the National Congress of American Indians in our energy resolutions, I will have them forwarded before September 12th to your office and they'll be on record and I cannot cover those in five minutes.

One, we need immediate relief for our fuel, which the costs have skyrocketed in the last year. We need to do assessments on each of our community's needs and you need to consult with each tribal government. We are fortunate here in our areas in Alaska, in our villages, the tribal governments are the ones who are providing all of the services that our tribal citizens need for basic services at this time.

Two, the federal and state governments need to take immediately action to subsidize transportation of all fuel to rural Alaska. You know, how can we get around that? We need to, you know, the transportation of goods coming into Akiak have also skyrocketed and, you know, it's just really hard to get the goods from Anchorage or Seattle or elsewhere.

Three, we need immediate capital to harness the wind, solar, biomass, hydro, and have each tribal government develop their alternative energy. This can be done right now with that capacity and with the right kind of training for each community. Because I agree each community has its own unique needs and we need to do a thorough assessment and we can develop these alternative energies right now for each community. In my community hydro power is available right now but we have no such capital to start right now. So I think things that we can do to cut those costs can be done right now.

Four, we need immediate relief for operations of our schools, community buildings, clinics and other public facilities to include them in the power cost equalization model that we currently receive. That is a good program but I think we need to expand it more if we are going to be sustainable. For example in Yupiit School District we have to cut $800,000 from our operations. Because of the cost of fuel this year, we had to cut from the 30 percent of the budget to meet our budgetary needs to provide education for our children. So everybody's being hit by the cost, and especially our schools and I wanted to lay that example. So cutting about a million bucks from our education budget in a district is a huge hit that I think it's going to have ripple effects throughout rural Alaska, which we are trying to provide quality education and the kids deserve that quality education.

Five, we need immediate capital to consolidate power generation with several villages to connect them to cut costs and make them sustainable into the future. Right now each community is providing their own with the exception of the Bethel to, for example, Bethel to Napaskiak, Bethel to Napakiak or to the local immediate areas. But I think we have cluster of the villages—that are in clusters that can provide in cooperation with each other to provide one sys-

tem to provide power to each community; that will cut operation costs and other costs.

So I think these things that we can do in the immediate future.

And I really appreciate the opportunity to have field hearings and consultation in Bethel right now, today. I really appreciate that and we've been trying to suggest that these ongoing consultations with the federally recognized tribes be ongoing every year to find out where each of the communities are before any more outmigration happens.

I really appreciate and thank you for listening to my tribal concerns about the energy issues that have profound effects on our lives every day in rural Alaska. And I just suggest, again, to have ongoing dialogue with each community and do things right now to have our villages sustain themselves now and into the future. So we need short-term relief and we need to do some long-term planning and I think those are on the way.

I really appreciate the five minutes Honorable Senator Murkowski.

Thank you.

[The prepared statement of Mr. Williams follows:]

PREPARED STATEMENT OF MIKE WILLIAMS, CHAIRMAN, ALASKA INTER-TRIBAL COUNCIL

Greetings! My name is Mike Williams, currently Chairman of the Alaska Inter-Tribal Council, Area Vice President for the National Congress of American Indians, President of Yupiit School District Board of Education, Vice President of Rural Community Action Program, Akiak Native Community Tribal Council.

We have sustained ourselves here in Rural Alaska for thousands of years. I remember as a child growing up in a small village that we had only 2–4 hours a day of electricity, with no other appliances that we have today. We did not have electricity in the summer months. We utilized our ways of preserving our fish, game and what we gathered throughout the summer. I remember we had a small wind mill in Akiak to provide electricity to our hospital. Times have changed very quickly when we have all the appliances that we have in our communities and our villages are providing electricity and oil and gas for our motors and snowmachines to engage in subsistence activities. We have over two hundred Tribal Communities throughout Alaska that are experiencing problems of providing sustainable power, fuel to our members.

I want to make a few recommendations.

1. We need immediate relief for our fuel which the cost have skyrocketed in the last year. We need to do assessments on each of our communities needs and you need to consult with each Tribal Government.

2. The Federal and State Governments need to take immediate action to subsidize transportation of all fuel to rural Alaska.

3. We need immediate capital to harness the wind, solar, biomass, hydro, and have each Tribal Government develop their alternative energy. This can be done right now.

4. We need immediate relief for operations of our schools, community buildings, clinics, and other public facilities to include them in Power Cost Equalizations model that we currently receive.

5. We need immediate capital to consolidate power generation with several villages to connect them to cut costs and to make them sustainable into the future.

I recommend that we have ongoing consultation with each of Alaska's Federally Recognized tribes every year to review our status.

I really appreciate and thank you for listening to our Tribal concerns about the energy issues that have profound affect on our daily lives in Rural Alaska. Thank you.

Senator MURKOWSKI. Thank you, Mike, appreciate it. Appreciate your leadership on so many different levels.

And now with us this morning we have Chris Mello, who is with the Alaska Energy Authority, we welcome you and look forward to your comments.

**STATEMENT OF CHRIS MELLO, PROGRAM MANAGER, ALASKA ENERGY AUTHORITY**

Mr. MELLO. Well, thank you, Madam Chair. For the record I'm Chris Mello. I'm Program Manager with the Alaska Energy Authority. I oversee design and construction of energy projects in rural communities throughout the state.

I wanted to talk about how the state is moving rapidly to help reduce the dependence on fossil fuels. House Bill 152 establishes a renewable energy fund and initially there is $100 million available for the development of renewable energy projects with continued funding over the next five years. The request for application was originally scheduled to be issued on the 29th but that schedule has slipped a little bit and it will be out next week. The advisory board has been named and is working on draft regulations right now. The advisory board will review the applications and prepare recommendations for consideration and award by the Legislative Budget and Audit Committee, and we expect that this process will be completed in the late fall. The selection criteria for these grants is based upon economic and technical feasibility, energy cost per capita and statewide balance and matching funds.

From the State's perspective, continued federal support is critical to help us meet the challenge of high energy costs. Federal funding of the Denali Commission has been in steady decline over the last several years. The Alaska Energy Authority has constructed about 60 bulk fuel storage facilities and 32 powered generation facilities in Bush communities throughout the state in partnership with the Denali Commission using federal funds, and, however, these programs have not yet been completed. We all know that it's important to reduce our dependence upon diesel for heating and power generation in rural communities, but it's not possible at this time and in the foreseeable future to completely eliminate the need for diesel fuel in Bush Alaska. Small communities that are off the grid that have hydro and other alternative energy potential must have a modern diesel powerplant with modern controls into which those alternative energy resources can be integrated.

You just can't run a village on wind and you just can't run it on hydro.

And the same thing can be said for tank farms. The best way for a community to get full value out of every gallon of diesel is not to lose any through leaks and spills. So energy conservation for fuel starts with a tank farm that does not leak. And energy efficiency in a community starts with a diesel powerplant with a modern control system that shows about a 26 percent increase in efficiency over the previous powerplant. It also helps to provide stack and jacket heat recovery systems that can provide clean heat and continuous heat for schools, health clinics and other public facilities.

Also from the State's perspective the Congress has approved Renewable Energy Deployment Grant Program last year and it au-

thorized up to a 50/50 matching grant to pay for construction of renewable energy projects in Alaska. This program needs to be implemented by the Department of Energy and it needs to be funded. Likewise with the Authorized Energy Policy Act of 2005. There are potential renewable energy projects on Native lands throughout the state, including very viable potential projects right here in the Bethel region for wind and biomass.

Lastly, we'd like to see support for the Regional Biomass Energy Partnership. The Department of Energy eliminated its funding for this program in 2006. The Alaska Energy Authority has continued development in this area on a lower level and recent works include developing small cleaning burning wood boilers to heat schools and community facilities, helping the city of Craig do a sawmill waste fired heating system and testing biodiesel and assisting fish processors in development of portable fish oil rendering module.

And with that I want to thank you for the opportunity to give testimony and my testimony is complete.

[The prepared statement of Mr. Mello follows:]

PREPARED STATEMENT OF CHRIS MELLO, PROGRAM MANAGER, ALASKA ENERGY AUTHORITY

Thank you for the opportunity to present testimony before the Senate Committee on Indian Affairs. The State of Alaska is moving rapidly to help reduce our dependence upon fossil fuels. HB 152 establishes a Renewable Energy Fund. Initially $100,000,000 will be available for the development of renewable energy projects with continued funding over the next 5 years. The request for applications will be issued on August 29th. An advisory board has been named by the Governor and draft regulations are being prepared. The advisory board will review the applications and prepare recommendations for consideration and award by the legislative Budget and Audit Committee. We expect that process to be completed by late fall. The selection criteria for these grants will be based upon economic and technical feasibility, energy cost per capita, statewide balance and matching funds.

From the State's perspective, continued federal support is critical to help us meet the challenge of high energy costs. Federal funding of the Denali Commission has been in steady decline over the past several years. The Alaska Energy Authority (AEA) has constructed some 60 bulk fuel storage facilities and 32 power generation facilities in bush communities throughout the state in partnership with the Denali Commission using federal funds. However, these programs have not been completed. We all know that it is important to reduce our dependence upon diesel for heating and power generation in rural communities. It is not possible for the time being, to completely eliminate the need for diesel fuel in bush Alaska. Small communities off the grid that have wind, hydro or other alternative energy potential must first have a diesel power plant with modern control systems into which alternative energy can be integrated. Energy conservation starts with a tank farm that doesn't leak. Energy efficiency starts with a modern power plant that gets up to 26% more kW/per gallon than the old power plant and uses stack and jacket heat recovery systems to provide clean heat to nearby buildings.

Congress approved Senator Murkowski's Renewable Energy Deployment Grant program last year and authorized up to 50/50 matching grants to pay for construction of renewable energy projects in Alaska. This program needs to be implemented by the Department of Energy (DOE) and generously funded. It would also be helpful if congress funded the grants programs authorized under the Energy Policy Act of 2005. There are potential renewable energy projects on native lands throughout the state including wind projects here in the Bethel region.

Lastly, we would like to see support for the Regional Biomass Energy Partnership. DOE eliminated its support for this program in 2006. AEA has continued development in this area at a lower level. Recent work includes:

- Developing small, clean-burning wood boilers to heat schools and community facilities in Fort Yukon and more than 30 other rural communities.
- Cost-sharing the City of Craig's sawmill waste-fired heating system which saves an estimated $100,000 in school and facility heating costs.
- Testing biodiesel and assisting fish processors in developing a portable fish oil rendering module.
- Support Chena Hot Springs and the Fairbanks Borough in developing a 400kw biomass-fired power suitable for village power.

Federal and regional partnerships are critical as we deploy new technologies using biomass and we hope that you support funding for this program.

I thank you again for the opportunity to give testimony before the committee on Indian affairs.

Senator MURKOWSKI. Thank you, I appreciate that. And let me just start with my questions to you first and follow up with some of the comments that you have made there.

We recognize that we have some funds available at the state level through the Renewable Energy Grant Program and I think that that's considerable opportunity for us and we look forward to all that being set in place so that communities can begin to get moving. What kind of response do you anticipate that you will receive from the Native communities, from places like here in the region in terms of requests for assistance for those renewable energy grant funds?

Mr. MELLO. Yes, overwhelming. We'll receive overwhelming response.

Senator MURKOWSKI. And I appreciate that you're still putting in place kind of the procedures and the mechanisms, but is this going to be a situation where you've got to evaluate, you've got your pot of money, you've got your $100 million, and you've got to evaluate from a cost benefit perspective where we're going to get the most bang for the buck, if you will, is that going to disadvantage smaller communities from being successful applicants to those grant monies?

Mr. MELLO. Well, at the risk of speaking for the advisory committee, I think that is going to be one of the criteria, to see to it that that does not happen.

The first part of your question is what sort of response we're going to get. Earlier this year we had a $5 million request for proposals from the Denali Commission for renewable energy projects. We received applications in excess of $2 billion for that.

Senator MURKOWSKI. Right.

Mr. MELLO. So I would expect that this won't go unnoticed. I would expect that we will receive grant applications.

Earlier this week I was traveling in Copper Center, Gulkana, Gakona and communities in that region talking about wood heating biomass projects, and they're very enthusiastic and they're looking to put their grant applications together. I think smaller communities that have potential are going to receive a good review and a fair judgment on that. One of the criteria that the advisory committee is looking at is a statewide balance.

Senator MURKOWSKI. Yes.

Mr. MELLO. So it doesn't just go to—weighted to one region or another, there are small communities throughout the state that have great needs and also have good energy potential and I don't think that that will be overlooked.

Senator MURKOWSKI. What kind of technical assistance, you know, can you offer? You look at a community like in Anchorage or Fairbanks or some that have—they've got government systems in place, they've got grant writers, they've got analysts, they've got their projects ready to go yesterday and they've got it fully mapped out and they'd be ready to submit an application, but if you've got a—you know, let's take Mike's community here, at Akiak, you know, you say you've got wind potential and you had windmills in the past so you know you've got an opportunity, you know you've got the resource there, but you don't have the technical expertise to submit your grant yet, is the State going to be helping to facilitate anything in that vein to help these smaller communities?

Mr. MELLO. The short answer is yes.

Senator MURKOWSKI. Okay.

Mr. MELLO. And how that assistance is going to be provided is yet to be sorted out, we are a small agency. But a lot of the information about what resources are available for all sorts—all disciplines within the greater subject of renewable energy, that information does exist within the Department of Natural Resources and the Alaska Energy Authority.

Senator MURKOWSKI. Right.

Mr. MELLO. So there's a pretty good sense of what the wind resources are——

Senator MURKOWSKI. Right.

Mr. MELLO.—the hydro resources are, geothermal resources are, and so I think that that assistance is going to be provided. It just doesn't make sense to overlook a community because they didn't have the wherewithal——

Senator MURKOWSKI. Right.

Mr. MELLO.—to get their application filled out right.

Senator MURKOWSKI. And perhaps we'll hear from our federal witnesses whether there is opportunities for this kind of technical assistance, if you will, to help facilitate these communities, get to that level where they're able to compete with some of the bigger dogs that are seeking those same sources of funding. But it's important as we move forward that these processes are in place——

Mr. MELLO. Yes.

Senator MURKOWSKI.—and that they work equitably, urban versus rural, big community versus smaller community. I wanted to ask the question because each of you in one way or another spoke to the issue of conservation, whether it's making sure that you have fuel storage tanks that don't leak or what you can do within respective communities. I was out in Dillingham earlier this year and I was there the week after the spring barge had arrived and the sticker shock for the people in Dillingham was just, you know, phenomenal because the price had literally had gone up well over a dollar just literally overnight. And I was talking to a couple there living on a fixed income and I said, well, you know, conservation, this is really going to be the most immediate thing that we

can do and the response to me was, Lisa, you don't think that every morning we don't think about how to conserve energy and you don't think we haven't been doing this for years. So the question to you is, you have been conserving, you have been thinking smart, we're now to a point where, talking to the folks here in Bethel, what you saw from just last month's utility bill, seeing, you know, an increase that is almost double what you paid last month for your utility, how can we provide all these people in this room here some further tips on what more can you do as a family, as a community, as an agency, from AFN's perspective, from the Native Corporation's perspective, what can you provide in terms of additional suggestions that, you know, maybe don't cost a lot of money, but that you can implement today?

Anybody have any suggestions?

Ralph.

Mr. ANDERSEN. Thank you, Madam Chair.

I think in a lot of cases it's not so much additional information but getting basic information out.

Senator MURKOWSKI. Does AFN do anything like that currently?

Mr. ANDERSEN. AFN hasn't yet started anything like that but we're planning to have, as part of our convention, a whole section focused on energy, including booths and information——

Senator MURKOWSKI. Well, isn't Alaska Marketplace looking at specifically giving grants to renewable energy ideas throughout Alaska?

Mr. ANDERSEN. Yes.

Ms. LEASK. Yes.

Senator MURKOWSKI. Can you speak to that?

Mr. ANDERSEN. Janie can probably speak to it better than I because, you know, I'm with the energy working group.

Senator MURKOWSKI. Right.

Mr. ANDERSEN. But I did receive information on the recent call issued by the Marketplace with the real strong preference for those that—for the proposals that do encourage either conservation and development of alternatives or some other energy or some other energy related project that helps us reach our solution.

And I guess it really depends, Senator, on what level.

Senator MURKOWSKI. Yes.

Mr. ANDERSEN. At the family level, I think, it's like the couple told you in Dillingham, my home town, that we have been practicing energy conservation for a long time. I think that tips can be provided in brochures. Those are things that we're, in our region, are beginning to look at.

I think the bottom line, though, is that—and as you mentioned in your opening remarks, there are a number of regions and areas that have developed energy plans and strategies and policies and those activities such as outreach and such as providing information are an essential part of those. I mean Bristol Bay, we have a plan, I've submitted a copy to your staff earlier. But I think the real problem is in the implementation.

Senator MURKOWSKI. Yes.

Mr. ANDERSEN. Is with funding, especially. Mike and others may have mentioned, you know, that we do have these policies and plans but really it's how do we take the next step, okay, with the

BIA/TPA funding, for example, being absolutely flat for the past 20 years, that causes problems in being able to develop new programs. I met, or just spoke briefly with Bob Middleton a minute ago because at BBNA we're trying to—and other regions as well, are trying to develop tribal energy programs but that we don't have funding to implement them. We can develop the plans and strategies and policies and mission statements and goals and outcomes but kicking them into gear takes money which we don't have.

Senator MURKOWSKI. Yes.

Mr. ANDERSEN. And I think the solutions to getting more information out can be done at different levels and I think we all need to, you know, become more aware of the need for that.

Senator MURKOWSKI. Well, and I think that is something that we can do whether it's AFN or First Alaskans or, I know, AEA, the tribal councils, we've got our own communication networks. I know that on my website we've got a conservation tip of the week, and we just solicit ideas from people around the state and we post them. I mean it's nothing earth-shaking. But I think part of the frustration is, is that everyone thinks that we have to have a big energy plan in place before we can start implementing things, and the reality is is that each one of us can be doing small things within our own home, within our own businesses that cumulatively can make a difference. And I think it helps when we share those ideas, and help to facilitate kind of that community action from a volunteer perspective first, and then we can work on that bigger—can you speak to the Alaska Marketplace and what they are doing with urging innovation in renewable energy areas?

Ms. LEASK. I got the same email that Ralph got.

Senator MURKOWSKI. Okay. I saw the advertisement in the ADN so——

Ms. LEASK. But I know that energy is one of the four categories that they're looking for for innovative projects for the rural Alaska Marketplace, which will be announced during the AFN Convention. I know it's a relatively short timeframe but I know that that's one of them.

Speaking to what people can do, I think RurAL CAP has done a really good job through its weatherization program in trying to be proactive and getting tips out to people on ways people can save money by weatherstripping or by programmable thermostats or maybe even going to what Juneau had to do, which brought a smile to my face, when, I mean nobody likes to see anybody suffer or go without, but at the same time they unplugged everything in their house and then they started plugging things in to see what took juice and then what they really needed to have plugged in, so I think that that is one area, you know, that people can do.

You know, but I think we need—the Interior Regional Housing Authority is doing a terrific job in trying to build a house for rural Alaska. Many of the HUD houses that we have in the villages, the design came from out of state and didn't take any consideration in of our winters, of our climate, or where the house was going, it was just a cookie-cutter, here's a design so I think that the Interior Regional Housing Authority is doing a prototype that I think can be used and I think we can put some more money into retro-fitting houses and glass or putting what—another thing that people can

do is to, during the wintertime, is to put either foam or something, curtains, at a minimum, over windows, which are the source of big energy leaks in housing.

But I think in any of this, we do need to have weatherization, we do need to have collaborization but we also need to have jobs in rural Alaska and whether those are seasonal jobs or whether those are related to the pipeline or the CDQs on fisheries, but we really do need to have rural Alaska in order to stem the tide because you do get the young people going back to their villages very idealistic and really wanting to go to work there but there's really not the jobs that's available so we can talk weatherization and we can talk about providing and saving money and fuel to make villages more affordable but we also have to talk about the jobs, too.

And, finally, I think that whatever we do, we need to bring state dollars to the table, we need to bring federal dollars to the table, we need to bring non-profit dollars to the table, regional corporations. One of the things that we've decided that we're going to do at First Alaskans is try to be a clearing house for what everybody is doing with respect to affordable energy and renewable energy. I didn't know, for instance, that in the Bering Straits region, Bering Straits Native Corporation put $6 million into windmills in their area, you know, and to try to share information among different Native organizations and groups.

Senator MURKOWSKI. I think that we can gain so much from the work that has been done in other parts of the state where maybe different challenges——

Ms. LEASK. Yes.

Senator MURKOWSKI.—but still challenges nonetheless, and to hear that First Alaskans will assume that role as a clearing house, I think, is good, it's very important because I think we need to recognize that through the sharing of the information we're probably going to be a step ahead when we start in some other areas, perhaps from the mistakes or the successes.

Mike, I wanted to ask you, you made the comment about the need, and I don't want to misinterpret your words, but to subsidize fuel to rural Alaska was what I wrote in my notes. One of the things that kept coming about repeatedly yesterday in my conversations with people, whether it was in the grocery store or talking at dinner, was the fact that, here, in the region, everything comes to you by either air, very expensive, or your goods come up via barge, and the prices that you have to pay are now even higher because in order for that barge to get there they got to fuel the barge and that's expensive and so the cost that is added on to the goods is just that more. You think about the rest of the state and the infrastructure that is provided to them, through federal or state dollars, whether, you know, you've got the railbelt, you got a railroad, you got roads that connect from Seward up to the Interior area; in Southeast you've got the Alaska Marine Highway System that in a lesser extent is kind of their highway, but here, you really don't have your transportation infrastructure that is your state or your federal infrastructure. You've got your barge company that's bringing the goods up, whether it's the materials to build your home or the food supplies that you feed your family with. Anybody have any suggestions as to how we can, you know, you say sub-

sidize fuel costs, I guess I'm looking at the situation of how you move things to the region as being a major impediment and a cost multiplier.

Mr. WILLIAMS. Yes, first of all before I answer that question, as vice chair for Rural Community Action Program and I've been on that board for the past 15 years working on weatherization projects and also working on the portable homes for rural Alaskans. And I commend RurAL CAP for providing tips and information how we can conserve fuel in each community, and to cut down on or do some assessments on green house gases and et cetera, on how much carbon you produce in each household. I think more weatherization programs in each community must be implemented and if we're going to do an impact on cost reduction or saving energy in rural Alaska we need to do that and we need to provide funding to each community because we're doing several projects here and there.

And I would also recommend that each housing authority, that they build these energy—five star energy efficient homes right now. It can be done. For example there is Tim Meyers from Bethel that has been doing some stuff to do minimum fuel consumption to each house and he's done quite a few things right now and I think it can be implemented with all of these housing projects that are going on each day in our areas and I think Janie alluded to these designs are being built or being copied from, for instance, from New Mexico.

Senator MURKOWSKI. Yes.

Mr. WILLIAMS. So I just wanted to put in that many rural community action programs here in Alaska, our Native communities are doing the same. So I think in terms of the transportation costs, I think it's stemming from—I just hate to point fingers at anybody but I think, you know, we have a Federal Government that sets policy and, you know, why are we in an energy crunch right now in this nation, you know, we're not just the only ones who are paying the price right now. I think that with all the profits that are going on with the only companies and we read it every day in newspapers, that enormous profits are being made and who's paying the costs, we are.

In terms of providing trans goods from Seattle and Anchorage through air and through shipping, I just, you know, wonder how we can, you know, provide lower costs of the transportation of flour, rice, et cetera. But I think the leadership of this nation must take action right now to make, no matter where you live, that you make everything sustainable into the future or else, you know, if we do not, you know, where do we find funding for all of these projects and these trust programs; it's from the Federal Government. And I think it's the trust responsibility of the Federal Government to the tribes here in Alaska and in each village, it is the responsibility to provide that. But, you know, I think right now with the limited amount of funding that we have it's been—we've been trying to extend the value of the dollar. So I also agree with Ralph's comments on those flat funding, you know, we've been—the funding has been going down and/or flat and the value of the dollar has gone down as well but, you know, I was trying to think of how we can get assistance for this and I think we can somehow but we

know the cost of war, we know the disasters that are happening, you know, we're providing money for those issues that are going on. But I think this can be done but, you know, those were my recommendations that——

Senator MURKOWSKI. Thank you.

Mr. WILLIAMS.—we need to do something. For example, the bypass mail. We've been depending on the fruits of the bypass mail but when I hear that it's going to be on the line and if we lose it then how can we transport a thousand pounds to Akiak at reduced costs, and if we pay the same amount of cost of that thousand pounds, then we can't afford it.

So I really wanted to see—throwing that out on helping us sustain ourselves out here for the transportation costs because——

Senator MURKOWSKI. Well, we have so much that we could talk about all morning and each issue will take us even further. We do need to move on to the next panel.

Before we do, though, your comments remind me, though, you're talking about the federal role and I'm sitting here in my federal capacity, most certainly, but I think we also recognize as Alaskans, that it is not just the oil companies that are standing to benefit from the high prices of oil, the state of Alaska and our treasury and our people are benefitting a great deal. I view this as an opportunity for us, as a state, as our treasury gains $12 billion from last year because of the high prices of oil, that this is our opportunity to invest in ourselves, to take that resource from a finite resource, if you will, and help develop that infrastructure, the clean renewable energy resource that will take this state into the future for as long as we will be around. I view that as our opportunity to invest in ourselves and feel that that challenge is there for us, it is not just the Federal Government, it is not just the local community, it is all of us and we've all stated that, but we've got an opportunity now as a state to be very proactive in making this happen.

So I know Janie, you're itching, but very, very, very short.

Ms. LEASK. Very, very quick. And I just wanted to say on that line, at an AFN leadership meeting that was held on energy a couple of weeks ago, one of the speakers who happens to be on our board of trustees challenged the Governor to set aside, I think it was $200 million a year, toward finding solutions and coming up with innovative sources of renewable energy and start implementing that.

Senator MURKOWSKI. We can do it.

Ms. LEASK. $200 million a year for five years.

Senator MURKOWSKI. Yes.

Ms. LEASK. And, you know, I totally agree with you, I think the state of Alaska with our money, we're giving out lots of different things but we're not really addressing the core.

Senator MURKOWSKI. We're not investing in ourselves and providing for the long-term solutions.

Ms. LEASK. Yes.

Senator MURKOWSKI. I want to thank each and every one of you for your testimony. Please know that if there's anything further that you would like included, that you can also submit addendums to your statement. With that we can close out this panel and bring up Panel No. 2, please.

Mr. WILLIAMS. Thank you very much.

Senator MURKOWSKI. Thank you.

[Applause.]

Senator MURKOWSKI. I will apologize for not giving everyone a stretch break but we ran over a little bit with that first panel and we don't want to short change Panel No. 2 here, so we'll just keep moving. If those of you need to get out and stand up, it's a little bit warm in here, but without disturbing the proceedings here, we would encourage you to do that. We're joined again this morning, Panel No. 2, by Mr. Myron Naneng, Matthew Nicolai, Gene Peltola and Ron Hoffman. Gentlemen, I welcome all of you, appreciate all that you do in your respective capacities. And, Myron, if you would like to lead off, Myron, of course, is the president of the Association of Village Council Presidents located here in Bethel, thank you, and good morning.

**STATEMENT OF MYRON NANENG, PRESIDENT, ASSOCIATION OF VILLAGE COUNCIL PRESIDENTS**

Mr. NANENG. Good morning. Quyana (In Native) Chairman Murkowski, welcome and welcome to all the staff and people who are here today to hear testimony regarding an issue that's really affecting each and every one of us in our own communities. It's nice to have you back here in Bethel, Senator Murkowski.

Senator MURKOWSKI. Thank you.

Mr. NANENG. And it's the hub of the Yukon-Kuskokwim Delta. The Association of Village Council Presidents is a non-profit human and social service entity that represents 56 federally recognized tribes that make up the region. You have brought the committee here because while the energy crisis affects America, it is crushing Alaskan villages. Current prices, as of this week, updated from my written submission, written testimony, we called around yesterday, the Lower Kuskokwim averages, from Bethel, we have $5.98 per gallon for gas, which is up 63 cents since June 25th. $6.43 per gallon for heating fuel, which is up $2.02 per gallon. The Upper Kuskokwim averages $6.30 per gallon for gasoline, $6.60 per gallon for heating fuel. Lower Yukon averages, and we got these from Emmonak, $7.25 per gallon for gasoline which is up $1.34 per gallon since June 25th, and $7.83 a gallon for heating fuel, which is up $2.98 per gallon.

Senator MURKOWSKI. From June?

Mr. NANENG. From June. The Middle Yukon averages, and these are from the village of Marshall, $6.41 per gallon for gasoline, which is up 28 cents per gallon and $7.15 per gallon for heating fuel and this is up 39 cents per gallon since June. And on the coastal villages, Chevak and Scammon Bay, pay $6.50 per gallon for gas, $6.61 per gallon for heating fuels.

Those are the prices that are currently being paid by people in our villages.

The irony of the situation, this national energy crisis and debate focuses on Alaska, while rural Alaskans cannot afford to heat our homes, drilling in the Arctic National Wildlife Refuge is being debated and it has been debated for a long time, especially in Washington, D.C. With the energy crisis it's more of a hot button issue in this election year, especially in other rural areas of the Lower

48 states. A Republican in Colorado has toured ANWR this week to make her decision about it in her race against her opponent who opposes drilling. Missouri voters are asking their congressman what he thinks about drilling in his bid for Governor. So other parts of the country are talking about what they can get out of Alaska. But this does not even matter that the rise of oil prices have enriched Alaskan treasure, it still cuts the throat of many who live in Alaskan villages, especially in rural Alaska, even with the resource rebate. The State approved a bonus of $1,200 along with the Permanent Fund Dividend for each resident to help relieve some of the energy burden, our people expect things to get much worse. Last years fuel prices in our communities on the average 60 cents higher than the U.S. average. With each successful seasonal fuel shipment the cost always increases. There's never a decrease in fuel prices when they deliver them. And our first snow is barely two months away and we're going to have a critical winter, we can anticipate one.

Citgo Native American Heating Program gave our villages some relief last winter and it's going to be needed again.

A University of Alaska study published in May showed that rural Alaskans will spend 40 percent of their annual income on energy this winter compared with four percent for average Alaskan households, that means the urban areas. Our winters are brutal, the winds and elements plus our aging and poorly constructed early BIA HUD homes, commercial properties and public and tribal facilities, energy upgrades for older facilities will make the most immediate and sustainable impact on energy costs.

Fuel price and other energy costs and use. Prices for residential heating and regular gasoline increased over 100 percent since 2007 in many of our villages and the estimation does not include taxes. Alaska Village Electric Cooperative, which serves 53 small villages in Western Alaska, or most of them in Western Alaska had a fuel bill that went up $26 million from $14 million last year. Village residents are paying an average of $300 a month in electric bills with an average household income of 17,500. Many families are unable to maintain their livelihood and support their households. Locally owned utilities face power shut-downs and brown-outs throughout the winter in order to conserve fuel and save energy costs. Some of the villages have not increased their fuel prices because they're trying to help their residents in their communities.

The quotes that I submitted for sample fuel prices per village from the Tundra Drums from January is no longer in effect. I've stated the increases that I just noted for parts of the areas within our region, and you can see the big difference of that, they've increased substantially.

Taking charge biennial energy plan for 2008 and 2010. AVCP, Calista working with the organizations that are represented here are working to create the regional energy plan through Nuvista Light and Power Cooperative in order to conduct energy feasibility studies for the region and for the developing project at Donlin. The energy study was completed by Nuvista in 2002 and was followed up with a feasibility study in 2004. Nuvista is now engaged in energy planning and development for the process for the AVCP Calista region. One of our partners, a village located in (In Native),

Chaninik Wind Group received 4.8 million grant in 2008 to develop energy projects and determine feasibility of subregional wind energy for four villages.

Regional wholesale cooperative is being considered for many of the organizations within the region as well as the villages because like the previous people that commented, some of the school districts are having to reduce the salaries of their teachers in order to meet their energy costs for the winter, and that's going to be the same for many of the village businesses.

Energy planning for the subregion. AVEC has established three wind energy—wind generation projects, one in Toksook Bay and one in Hooper Bay and in Kasigluk. Hooper Bay is revitalizing the wind energy that they used to have in the community many years ago before even talked about wind energy. I grew up in a house that had wind generation on top of the house and we lit our homes with one light bulb before we had a generator in the community, a diesel generator in the community. So other wind energy projects are feasible along the Bering Sea Coast, the Lower Kuskokwim and the Bethel area. In heavily treed areas of the Middle Kuskokwim and Lower Yukon biomass projects could provide community facilities with heating needs with biomass boilers and wood chippers that would provide feed stock for these and a variety of community facilities and home heating boilers.

In-stream turbines in other areas of the Kuskokwim and Yukon Rivers and more powerful tributaries are worth investigating as is ocean wave energy along the Bering Sea Coast. But we know that ice conditions can limit some of that ability. There is a geothermal potential at the NYAC mine with the hot springs along with in-river hydroelectric potential for nearby communities.

We have also identified two potential targets for hydrocarbon exploration. On top of supporting more energy sourcing exploration, the plan considers an inter-tie to the railbelt based on the economic development potential for projects such as Donlin Creek Mine.

Developing fish oil and bio diesel from off shore-based and floating salmon processors on the Kuskokwim and Yukon using the Morse engine generator at a 50/50 raw fish oil-diesel blend.

Regional energy coalition is being talked about right now. It is imperative to call for development of a regional energy coalition that includes all utilities, major electrical consumers, fuel operators in the region. And such a coalition would enable regional electrical utilities and fuel agreements in order to achieve energy cost savings and efficiencies. A bulk fuel cooperative by the regions most solid businesses and institutions would hold an immediate short-term solution that could bring sustained savings. Right now non-profits are able to buy fuel for their facilities at lower costs than those in communities that have to buy it for their member villages.

Oil and gas exploration are conditionally green lighted. The tribes within our region for the first time recently rescinded a long-standing resolution that banned oil and gas exploration. A change of heart came as a result of the energy crisis. However, the technologists have dramatically changed that since the destructive and crude exploration and discovery processes first threatened our perception of land and subsistence food resource safety. Along with pollution concerns it is important to respect the rights and privi-

leges of each land owner, stakeholder directly involved in the utilization and development of renewable resource energy on their property, the communities have to have a say in what goes on with their renewable energy projects, including oil and gas exploration.

What the state should do and can do. Provide a renewable resource deployment assessment of the regions based on the MM/BTU cost. This mandate will help us ascertain the development and deployment of renewable energy projects based upon available renewable energy resource in the region. State financing should lead to local takeover of energy distribution and management.

A continuation of the Power Cost Equalization Program and improving its qualifying requirements to include schools and other government facilities affected by the current energy crisis would address immediate and dire needs and current budget constraints.

State of Alaska should create a Department of Energy cabinet office that includes regional representation for direct support, training and technical assistance.

The State should establish a dedicated Renewable Energy Deployment/Energy Efficiency Equipment Loan and Grant Fund in coordination with statewide and local banking and financing institutions.

The AVCP region supports the planning, development and utilization of North Slope gas for rural Alaskan communities.

The creation of more bulk fuel refineries in rural outposts such as those as Flint or Nikiski to meet heating fuel, gasoline, diesel, aviation and propane needs in a way that minimizes the costly shipment demands.

In closing. We'd like to thank the Committee on Indian Affairs and you and your staff for coming all the way from Washington, D.C., to address a very critical issue in a very remote and challenging part of the country during our energy crisis that affects us all.

Alaska may be the only state out of many you serve to hear our needs and attempt to address our concerns but we are grateful and earnest in helping you to build the record that will hopefully result in actions.

I understand that some of the members of the Alaska Legislature and other concerned citizens and business owners throughout this state are in the audience today and I hope that this testimony has brought you into agreement that the wealth of the state of Alaska does not translate into a wealth of infrastructure in most of rural parts of Alaska. We should have had these—I know the energy issue had come up over and over again throughout the last 20 or 30 years and we don't want to shame Alaska or any of the urban areas anymore about this, we want action, we want investments and we want returns in the form of stable and sustainable energy source.

Alaska is a massive state with innumerable natural resources and alternative energy options that we should be striving hard to develop and utilize. Protecting our way of life in the face of developing more responsible energy use and consumption should be possible in this day and age.

We look forward to working with you to continue to press this issue and seek solutions to make day to day living possible in one of the most unique parts of the world.

With that, thank you.

[The prepared statement of Mr. Naneng follows:]

PREPARED STATEMENT OF MYRON NANENG, PRESIDENT, ASSOCIATION OF VILLAGE COUNCIL PRESIDENTS

**WAQAA, WELCOME**

To the Chair, Senator Lisa Murkowski of the Select Committee on Indian Affairs, I welcome you back to Bethel, the hub of the Yukon-Kuskokwim Delta. The Association of Village Council Presidents (AVCP) is the non-profit social service entity that represents the 56 federally recognized Tribes that make up this region.

**THE YUKON KUSKOKWIM AVCP CALISTA REGION**

We are essentially a roadless area and are virtually island communities dependent on air and river travel for all our transportation, goods and services needs. Travel during the summer months is only by plane or boat, and in the winter months, by snow machine or ice road on the river systems. Our supplies are shipped in by daily airfreight service all year long, and by local barge service during the summer months, when the river is ice-free. We have come a long way from our ancestral way of living, but while we still live off the land in practicing Subsistence, we are unfortunately dependent on extremely costly and ineffective energy sources.

**ENERGY CRISIS AFFECTS AMERICA: CRUSHES VILLAGES**

The cost of living in our remote villages would not only startle, but frighten people living elsewhere in this country who think they have it bad. While they are truly affected to the point where they make certain changes in their lifestyles and habits, we are literally being crushed by the rising price of diesel fuel and the ripple effect is has on living in remote areas mostly hovering in and around the poverty level.

**CURRENT PRICES AS OF JUNE 25, 2008**
The Lower Kuskokwim averages (BET)
$5.98 per gallon for gas – UP .63 CENTS AS OF AUGUST 25
$6.47 per gallon for heating fuel – UP $2.02

The Upper Kuskokwim averages (ANIAK):
$6.30 per gallon for gas
$6.60 per gallon for heating fuel

The Lower Yukon averages (EMMONAK)
$7.25 per gallon for gas – UP $1.34
$7.83 per gallon for heating fuel – UP $2.98

The Middle Yukon averages (MARSHALL)
$6.41 per gallon for gas – UP .28 CENTS
$7.15 per gallon for heating fuel – UP .39 CENTS

Coastal (SCAMMON BAY / CHEVAK)
$6.50 per gallon for gas
$6.61 per gallon for heating fuel

We all know that energy is a very hot topic in this election year, especially in other rural areas in the Lower 48 States. Republican Marilyn Musgrave in Colorado's Fourth District faces a tough race against Democrat Betsy Markey. While Ms. Markey opposes drilling for oil in ANWR, Representative Musgrave is traveling up there this week to decide the matter for herself. Imagine, a Congresswoman from a small district in Colorado's job may be on the line for what she decides to do with an Alaskan energy source. The same goes for the Governor's race in Missouri and for many other challenges across the country.

But coming back to our State, more importantly our region, we are in dire need of improved, affordable, maintainable and sustained power. Just earlier this month, with a visit here by Senator Ted Stevens and his dear friend from across the aisle, Senator Daniel Inouye, Stevens asserted he wanted to help us cultivate our own energy. He said he'd like to direct profits from increased oil and gas exploration to pay for renewable energy from sources such as wind and water.

Our winters are brutal, the winds and elements buffet our aging and poorly constructed early BIA / HUD homes, commercial properties and public / Tribal facilities. Energy rating upgrades for the older facilities will make the most immediate and sustainable impact on energy costs. Our housing authorities are charged with keeping up with improving and building more Arctic adequate homes for our people, business owners and City / Tribal entities are stressed with the upkeep of dilapidated, outmoded buildings.

It does not even matter that soaring oil prices have engorged Alaska's treasury, it has come back to haunt our rural villages. Even with the "Resource Rebate" the State approved bonus of $1,200 along with the Permanent Fund Dividend (PFD) for each

resident to help relieve some of the economic burden, our people expect things to get much worse. Last years fuel prices in our communities were on average 60 cents higher than the U.S. average. With each successful seasonal fuel shipment, the costs are most certainly expected to rise. Our first snow is barely two months away and we are going to have a critical winter.

According to a University of Alaska Anchorage study published in May, rural Alaskans will spend 40% of their annual income on energy this winter compared with 4% for the average Alaska household. The relief checks from the states' royalty surplus is a nice gesture, but it does not solve the reality of our energy crisis.

Boats and four-wheelers are used to hunt. In some cases some of our hunters even use planes. If it weren't for our ability to live off the land (even though outfitting our hunting trips comes at a price) we would be hurting a lot more than we show. But many of our communities do not even have roads or vehicles, so fuel costs for transportation aren't necessarily even a factor in our energy crisis, it comes down to the cost of keeping our homes, schools and buildings warm and lit.

Recently, the AVCP Executive Board adopted a resolution declaring an energy crisis to demand that the State take steps to help reduce fuel prices for utilities and consumers. This resolution followed a similar action by the Alaska Village Electric Cooperative (AVEC) (which serves 53 small villages in the western part of the state) that proposed the State take measures to help keep the delivered cost of fuel for utilities at $10.00 per MM/BTU and a cap for other fuels at $12.50 per MM/BTU.

**FUEL PRICE AND OTHER ENERGY COSTS AND USE**

Prices for residential heating oil and regular gasoline increased over 100% since 2007 in many of our villages and the estimation does not even include taxes. The news media recently reported the AVEC fuel bill went up to $26 million from $14 million last year.

Village residents are paying about $300 a month in electric bills, a rate increase is likely to amount to an unaffordable 1/3rd to half. With the average household income of only $17,500, many families are unable to maintain their livelihood and support their households. Locally owned utilities face power shut-downs and brown-outs throughout the winter in order to conserve fuel and save on costs.

SAMPLE OF FUEL COSTS PER VILLAGE REFLECTS TODAY'S INCREASE SINCE 1/8/08

*The price of gasoline and heating oil in the Yukon-Kuskokwim Delta is sometimes twice that of prices in Anchorage and Fairbanks. Villages are ranked by the cost of heating oil, from highest to lowest.*

| Village | Vendor | Gasoline | Heating oil |
|---|---|---|---|
| Pilot Station | Pilot Station Inc. Native Store | $6.08 (↑.74) $6.82 | $5.98 (↑1.44) $7.42 |
| Gambell | Gambell Native Store | $6.02 (↑1.03) $7.05 | $4.89 (↑2.76) $7.65 |
| Marshall | Marshall Enterprises | $4.83 (↑2.43) $7.26 | $4.88 (↑2.66) $7.54 |
| Savoonga | Savoonga Native Store | $5.76 (↑1.29) $7.05 | $4.83 (↑2.82) $7.65 |
| Kongiganak | Qemirtalek Store | $4.48 (↑.87) $5.35 | $4.45 (SAME) |

*For comparison:*
Anchorage Various $3.06 $3.20
Fairbanks Various $3.07 $3.18

SOURCE: Telephone survey by The Tundra Drums

SAMPLE ELECTRIC / UTILITY
Akiachak Native Community Electric Co.
Population 644
Total Fuel Used (gallons) 181,453
Total Cost of Fuel/Gallon $596,325.38
Avg Price of Fuel/Gallon $3.29
Total Diesel Generated kWhs 1,800,172

Chevak (AVEC)
Population 916
Total Fuel Used (gallons) 180,785
Total Cost of Fuel/Gallon $345,846.13
Avg Price of Fuel/Gallon $1.91
Total Diesel Generated kWhs 2,287,638

Lime Village Electric Utility
Population 28
Total Fuel Used (gallons) 9,721
Total Cost of Fuel/Gallon $51,666.35
Avg Price of Fuel/Gallon $5.31
Total Diesel Generated kWhs 101,016

**TAKING CHARGE: BIENNIAL ENERGY PLAN 2008-2010**
Shortly after Placer Dome began exploration in the mid-1990's Calista Corporation worked with other regional organizations and helped establish Nuvista Light and Electric Cooperative in order to conduct energy feasibility studies for the region and the development project at Donlin Creek. An energy study was completed by Nuvista in 2002 and was followed up with a feasibility study in 2004. Nuvista is now fully engaged in this energy planning and development process for the AVCP Calista region. AVCP has partnered with the Calista Corporation, AVCP Regional Housing Authority, the Yukon Kuskokwim Health Corporation, AVEC, Chaninik Wind Group, MKEC, Kwethluk Power and the Lower Yukon Delta to administer the Nuvista Light and Electric Cooperative, Inc. (NLEC.) We are pleased to note that the Chaninik Wind Group received a $4.8 million state grant in 2008 to develop a wind development project to determine the feasibility of a subregional wind farm project to serve four villages and will also determine the wind resource availability for expansion and possible build-out to other parts of the region.

The regional wholesale cooperative has outlined energy priorities for adequate supply of reliable and affordable energy that is secure from outside economic influences. Our target is to help tribal and community members conserve and properly utilize energy sources, develop clean energy resources and promote renewable energy and economic

development. *The final approved copy of the 50-page plan will be submitted for the record as a supplement before it is closed.*

**ENERGY APPROPRIATE PLANNING PER SUB-REGION**

The NLEC will develop multiple, sub-regional proposals for the region which will identify specific renewable energy projects based upon appropriate resources available in each sub-region. So far, we have identified priorities in planning and developing regional wind energy projects along the eastern Bering Sea coast, the lower Kuskokwim coast, the Bethel area; and potential build-out from these areas to other nearby communities.

Despite the internal problems our Southwestern neighbors of St. Paul Island suffers in offering electric power *versus* wind-generated power to its 450 residents, no one can dispute the brilliance of TDX Corporation's investment in a single wind turbine that alone provided enough power and heat to TDX facilities on the island (including the airport, an industrial complex and a 90-bed hotel.) Ten years ago $1 million was a hefty investment, but the wind system was equipped with two diesel backups that allowed the Native corporation to sever itself from the city power grid with power to spare. We want to see that autonomy and lower available rates and surplus in our areas.

There are three wind generation projects developed and managed by the Alaska Village Electric Cooperative (AVEC) located in Toksook Bay and Hooper Bay on the Eastern Bering Sea Coast, and Kasigluk which is 20 miles west of Bethel. The Toksook Bay operation entails three 100 kW Northern Power Systems Northwind 100 turbines. For two years, this wind-diesel system also supplies power to nearby Tununak and Nightmute. This system is estimated to displace 52,000 gallons of diesel fuel per year. Wind Power is being revitalized in Hooper Bay. As one of the largest populations outside of Bethel, at 1200 residents with over 300 households; energy concerns from a far flung coastal village is very serious. The wind system is anticipated to displace the amount of fuel similar to Toksook Bay. The Kasigluk operation also entails 3 100 kW Northern Power Systems Northwind 100 turbines that also supplies power to nearby Nunapitchuk and Old Kasigluk.

In the heavily treed areas of the Middle Kuskokwim and Lower Yukon regions, Biomass projects could provide community facility heating needs with biomass boilers, and wood chippers that would provide feed stock for these and a variety of community facility and home heating wood boilers.

In-Stream Turbines in other areas of the Kuskokwim and Yukon Rivers and its more powerful tributaries are also a concept worth investigating; as well as ocean wave energy potential along the eastern Bering Sea coast. There is a geothermal potential at the NYAC mine hot springs along with in-river hydroelectric potential for the nearby communities.

We have also identified two potential targets for hydrocarbon exploration. On top of supporting more energy sourcing exploration, the plan considers an inter-tie to the railbelt based upon the economic development potential for projects such as the Donlin Creek Gold Mine Development Project.

Developing Fish Oil and Bio Diesel from our shore-based and floating salmon processors on the Kuskokwim and Lower Yukon should be determined since the AEA conducted successful tests of raw fish oil/diesel blends in a 2.2 MW 2-cycle Fairbanks Morse engine generator using 50-50 raw fish oil-diesel blend for power production. Currently AEA is working with University of Alaska Fairbanks (UAF) Arctic Energy Technology Development Laboratory, Alaska Department of Environmental Conservation, and the National Park Service to test performance of bio-diesel in generators at UAF and Denali National Park.

Solid wastes offer potential for providing additional local heating of public facilities. Waste heat energy should be incorporated into each community biomass wood energy project to determine feasibility for combined operations. The Sitka Waste-to-Energy facility has provided heat to nearby Sheldon-Jackson College. The Fairbanks Memorial Hospital operated a small onsite heat recovery incinerator for over a decade.

**REGIONAL ENERGY COALITION FOR (BULK) COST SAVINGS**

Immediate and imperative action calls for the development of a regional energy coalition that includes all the utilities, major electrical consumers and fuel operators in the region. Such a coalition would enable regional electrical utility and fuel agreements, in order to achieve energy cost savings and efficiencies. Bulk Fuel Purchases is brought up as an immediate short-term issue that needs to be addressed presently. A regional bulk fuel summit has been called for to address the fuel price situation. Bringing together the major fuel buyers and users to consolidate fuel purchases may enable to reduction of fuel prices.

A bulk fuel cooperative that would be made up of the most solid government and service infrastructures in the region (such as the school districts, electric utilities, village corporations and other fuel buyers) should create a negotiating and purchasing power.

**OIL & GAS EXPLORATION ARE CONDITIONALLY GREEN LIGHTED**

For the first time, our federally recognized Tribes have recently rescinded their long-standing resolve to banning oil and gas exploration. The change of heart may come in the face of the energy crisis; however, the technologies have dramatically changed since the destructive and crude exploration and discovery process first threatened our perception of land and Subsistence food source safety. Along with pollution concerns, respect for the rights and privileges of each landowner /stakeholder directly involved in the utilization and development of renewable resource energy on their property is also imperative. NLEC will cooperate with affected landowners and stakeholders concerning policies and procedures for utilization and development of renewable resource energy projects on their property.

**WHAT THE STATE SHOULD AND CAN DO**

The State of Alaska is encouraged to provide a renewable resource deployment assessment of the region based upon a MM/BTU cost. This mandate will help us ascertain the development and deployment of renewable energy projects based upon available renewable resources in the region. Should the feasibility and infrastructure of certain technologies be made available or possible under State financing, local entities can seek purchasing power to take-over energy distribution and management.

A continuation of the State of Alaska Power Cost Equalization Program and improving its qualifying requirements to include schools and other government facilities affected by the current energy crisis would address immediate and dire needs and current budget constraints.

The State of Alaska should create a Department of Energy cabinet office that includes regional representation for direct support, training and technical assistance.

The State should establish a dedicated Renewable Energy Deployment / Energy Efficiency Equipment Loan & Grant Fund in coordination with statewide and local banking and financing institutions.

The AVCP Calista Region supports the planning, development and utilization of North Slope gas for rural Alaskan communities.

The creation of more oil refineries in rural outposts (much like those in Flint Hills or Nikiski) to meet heating fuel, gasoline, diesel, aviation fuel, and propane needs in a way that minimizes costly shipment demands.

**IN CLOSING**

We thank the Committee on Indian Affairs for coming all the way from Washington, D.C. to address a very critical issue in a very remote and challenging part of the country during an energy crisis that affects us all. Alaska may be only one State out of the many you serve to hear our needs and attempt to address our concerns, but we are grateful and earnest in helping you build the record that will hopefully result in actions.

I understand that some members of the Alaska Legislature and other concerned citizens and business owners from throughout the State are in attendance today, and I hope that we have adequately presented answers and solutions to the questions you came here with. Alaska is a massive state with innumerable natural resources and alternative energy options that we should be striving hard to develop and utilize.

Protecting our way of life, in the face of developing more responsible energy use and consumption, should be possible in this day and age. We look forward to working with you to continue to press this issue, and seek solutions to make day to day living possible in one of the most unique parts of the world.

Senator MURKOWSKI. Thank you, Myron. Appreciate your leadership on behalf of so many in so many villages.

[Applause.]

Senator MURKOWSKI. Matthew Nicolai. Matthew it's always a pleasure to be with you. Thank you for all that you do and your comments this morning.

**STATEMENT OF MATTHEW NICHOLAI, PRESIDENT/CEO, CALISTA CORPORATION**

Mr. NICOLAI. Thank you, Madam Chair. We appreciate being invited to address the Senate Indian Committee on Indian Affairs. Welcome to Bethel and I hope that you had a good and joyful night and got to visit with a lot of the people here in Bethel.

We want to present our views regarding high fuel prices and the effect to our shareholders and also to Calista. I have been president of Calista for the past 13 years. I'm a 33 year employee of the company.

Something that we want to share with you that's very important for the Federal Government to understand is we have regional statistics of the region that the U.S. Senate must understand. We have two census bureaus, Bethel and the Wade Hampton. The statistics in our region gathered in the year 2000 and 2002, when we look at the poverty level on the national scale and also on the state scale, Bethel Census Bureau has 20 percent that has the impoverished district in the Bethel Census. Wade Hampton is the most impoverished, is the Emmonak area, where the average salary per capita in our region is $8,717, while the state median income is $22,660. That's considered the most impoverished district in the country. And the reason we want to share this with you, we've gathered information that Mr. Naneng read to you regarding the fuel prices in our region, when you consider what was being presented by a lot of the shareholders over the rest of the summer that we just passed through, the subsistence hunting and fishing activities, a lot of the shareholders in our region has been curtailed as a result of high fuel prices. We're hearing from, village by village, that families could not gather the foods that they needed because of high gasoline prices. I made multiple trips throughout the region and I hear that in the Yukon River and the Kuskokwim River. We're going to see this winter a result of high gasoline prices, many families that may be without subsistence hunting and the foods that they've gathered this summer.

Removing subsistence will definitely have a major impact and this is the reason why Calista, you know, we've always said that at AFN and we've always said that to you and we've always said that to any candidate, Calista is the only regional corporation that spent $4.8 million. We put in Title VIII of ANILCA, no one did, we're the region that worked with AVCP president, then Carl Jack, and we worked hard to make sure Title VIII was protected. Because the effect of subsistence is very important to our people. Calista, even though we're a profit corporation, it was number 1 agenda, that we protect the subsistence economy in our region. That's the reason why the high gasoline prices are impacting the people that we serve.

For Calista, the energy costs that we're seeing this year, we're seeing the exploration of our subsurface properties curtailed. Each summer we have programs, I want to walk through the past 12 years that I've been president, seeing exploration programs on our subsurface properties, the highest number of employment that we offered one summer was a little over 690 shareholders those were exploration jobs in NYAC, in Donlin, in Goodnews Bay and New Stuyahok, these are the four major exploration areas that we have. This summer the junior companies that we're used to seeing explore our lands did not show up. This summer we only had 135 employees actually work at projects that we had and those are mainly Donlin Creek. So we're seeing that effect of high diesel cost that the exploration companies need for them to look at our properties that we have.

Under ANCSA VII (i), Calista is holder of 6.5 million acres of subsurface properties. It is our duty and the director's understanding and our vice chair is here, Willie Kasayulie and one of our directors, also George Guy and John are here, their duty is to make

sure that we meet the requirements of VII (i) to ensure that we explore our properties are for future value and the future value of high diesel cost this year has been curtailed for future generations because any time when we're not spending money looking at our subsurface properties it curtails down into the future that future jobs are at stake. Donlin, right now, one major issue for Donlin Creek and 190 million has been invested Barrick and NovaGold were up to last year, where we haven't seen the new numbers for this year, if energy was resolved to Donlin it would be a mine today, it would have been in operation by 2008. If the mine became a project, if Donlin became a project it would employee 500 people in our region. Right now we can't deliver the project because of one major issue, energy. With the recommendations that we want to offer to you, especially this committee, has a trust responsibility to Alaska Natives and Native Americans, we appreciate that you came here to listen to our views and I hope that the committee does move forward on the recommendations that you heard this morning to the tribes and also to the regional corporations.

Something that's very important, as I read the policies of the Federal Government, when I try to understand how the Office of Indian Energy addresses Alaska Native organizations, something the village corporations have tried in our region to apply for funds through that organization, they're not eligible because of the language that's in that program. And the reason why I say the village corporations in our region, we have 17 utility companies and I have to speak for them, they're the owners of the surface properties, under the agreement of the Office of Indian Energy, the TERA, Tribal Energy Resource Agreements, do not include village corporations in Alaska. That means in my village George Guy runs a utility company, he cannot apply for funds for planning purpose that he wants to address for wind power or down in (In Native), those four communities, cannot get those federal funds because one, they're not eligible. So because a surface owner is a village corporation, they should be eligible to receive those monies. So I do hope that this committee looks at addressing that issue.

I'm one that generally does a lot of research on information on energy and something that we want to see in a long-term basis that we hope that the State and also the Federal Government address on the issue in developing a partnership that can address and resolve energy problems to the Bush Alaska. This has been done before. Historically, when you look at the Appalachian Commission, it developed the Tennessee Valley Electric Association that resolved energy to 16 states. And that was a partnership of 16 states that basically addressed energy and this is the 16 states even smaller than Alaska. So you look at Alaska, you have to look at it as a multiple state even though we're one state, we're the size of those 16 states. So I hope you carry that forward to the Senate Affairs, Indian Committee members that you cannot look at Alaska as one, you have to look at Alaska as multiple states with energy problems that can be resolved.

One major issue for regional corporations, we hold a lot of the subsurface properties that we want to look at alternatives. I hear from our neighbors up in NANA, that they want to address western coal. Imagine if they'd be able to turn biomass of that facility

and develop gas out of that that can be used in light of Western Alaska. We can't do that today because so many barriers that NANA has to go through to develop coal. We try to introduce coal into this region, we got shot, saying our people are going to die from black lung, you go to Salt Lake City, no one's dying from black lung. Right by the airport is a major coal facility, it doesn't even drop one single iota of pollution. The only pollution that they have is C02, and you know how the greenies talk about C02, that we're lighting up the world and we're having problems with what you call greenhouse effect and it's affecting the Arctic. That's the politics that we hear out of the greenhouse issues on pollutants that come out of coal. Coal is a major resource in Western Alaska owned by a regional corporation that will benefit 223 village corporations, 12 regions because of the VII (i) agreement if it was developed into a major energy source, and I'm just explaining one project that can have a multiple impact to the people that we serve.

So what we're asking you, I hope that you take into consideration, and you've heard some recommendations made this morning, we would like to see a partnership that you in the US Senate could offer to this Governor that we have, and we just had an energy conference in Anchorage that Senator Stevens, Senator Inouye and Governor Palin listened to the concerns that we had in AFN and I was very happy that Ralph Andersen carried those forward and those are the same messages that we heard. We want to see public private partnership to resolve rural energy.

Anchorage, I've lived there 33 years, I have the cheapest power, guess where I get my power from, rural Alaska. I get it there. North Slope Borough, everybody in Anchorage thinks it's part of Anchorage, it's not, it's rural Alaska providing power to Anchorage and we get the greatest subsidy that we resolve from oil tax subsidies that we got this huge money for cheap energy for urban communities and guess what urban communities do, they don't want to hear problems, and I'm glad Nancy's here, they don't want to hear about rural problems. This is the reason why I'm stating this. This is something that you, as a leader of the committee, can offer a public private partnership with this Governor. This Governor appointed a very good person, Steve Haggenson to lead energy direction and he's looking for alternatives that will resolve problems that we have.

We've been studied to death.

When we hired Bob Charles in the back, back there, to lead Nuvista Light and Power on behalf of this group, we found $25 million worth of studies came to our region and not even one resolution yet, $25 million of state money and not even one resolution. We hired one individual, Frank Bettine, that's the father of that Railbelt Energy, he recommended a railbelt to be addressed to Fairbanks, we hired him and he found through the records what we need to address regionally, that's the reason why this body here is working together and we've submitted to you 13 recommendations that we have, I'm not going to go through those, in the energy plan that we have. This plan is still in a draft plan, we gave it to you in rough draft form with many deletions in there so you could understand the working committee here, we are trying to address the problems but we need your help. The committee can be of as-

sistance to us in resolving energy problems—resolving energy problems, Madam Chair, will spur economic development and create jobs and I do hope that you carry forward that to the chair, who I'm very happy sent letters to us and said we want to read your recommendations and we are going to be moving those forward.

Thank you, Madam Chair.

[The prepared statement of Mr. Nicolai follows:]

PREPARED STATEMENT OF MATTHEW NICHOLAI, PRESIDENT/CEO, CALISTA CORPORATION

**Introduction**

U.S. Senator Lisa Murkowski, Vice Chair of the Committee on Indian Affairs, thank you for holding this hearing in our region and thank you for the invitation to appear before the Senate Indian Affairs Committee to provide our views on high fuel prices and to explore sustainable energy solutions for rural Alaska.

I am President/CEO of Calista Corporation, an ANCSA of 1971 corporation created by U.S. Congress. I am a 33 year employee of Calista Corporation.

**Overview of Fuel Prices in the Bethel Census and Wade Hampton Census Districts: Calista/AVCP Region**

We randomly picked several villages of the 56 villages we represent on fuel prices for unleaded gasoline and home heating fuel that our people are purchasing at this time of the year. Bear in mind these are summer prices, fall

delivery to all of our communities expect to see increase additional costs by another 25%.

**Unleaded Gasoline Costs:**

Lime village: $8.55 a gallon, Kwethluk: $6.15 a gallon, Eek: $6.40 a gallon, Kipnuk: $7.85 a gallon, Toksook Bay: $7.98 a gallon, Atmauthluak: $5.75 a gallon, Nunapitchuk" $5.74 a gallon, Russian Mission $6.05 a gallon, Marshall: $7.26 a gallon, Pitkas Point: 6:41 a gallon, St. Mary's: $6.55 a gallon, Mr. Village: $6.31 a gallon, Kotlik: $7.38 a gallon, Scammon Bay: $6.81 a gallon.

**Home Heating Fuel Costs:**

Lime Village: $9.50 a gallon, Kwethluk: $5.25 a gallon, Eek: $7.31 a gallon, Goodnews Bay: $6.14 a gallon, Kipnuk: $8.10 a gallon, Nunapitchuk: $5.69 a gallon, Atmauthluak: $5.69 a gallon. Toksook Bay: $8.77 a gallon, Russian Mission: $6.15 a gallon, Marshall: $7.54 a gallon, St. Mary's $7.03 a gallon, Pitka's Point: $7:13 a gallon, Mt. Village: $7.07 a gallon, Scammon Bay: $6.96 a gallon, Kotlik: $8.76 a gallon.

**Regional Statistics**

| **Bethel Census** | **Bethel** | **State** |
|---|---|---|
| Persons per household, 2000 | 3.73 | 2.74 |
| Median household income, 2004 | $36,057 | $52,141 |
| Per capita money income, 1999 | $12,603 | $22,660 |
| Persons below poverty, percent, 2004 | 20.7% | 10.0% |

| **Wade Hampton Census** | **Wade** | **State** |
|---|---|---|
| Persons per household, 2000 | 4.38 | 2.74 |
| Median household income, 2004 | $27,077 | $52,141 |
| Per capita money income, 1999 | $8,717 | $22,660 |

Persons below poverty, percent, 2004

26.0% 10.0%

Clearly the Calista/AVCP region has the highest level of poverty in America. Most of our people make ends meet through subsistence hunting and fishing.

**Effects of high energy costs:**

Gasoline and heating fuel are primarily used by our residents. High gasoline prices curtailed the subsistence activities of our rural people. We heard reports from many families in the villages they did not put up their summer fishcamps due to high gasoline costs. These families that did not gather subsistence foods will have extreme difficulties feeding their families this coming winter.

Home heating fuel has increased substantially as you seen in our graphs. Increase in heating fuels has increased all material products in village stores. We have not gathered information how much dry goods and materials because the fall deliveries are just starting to reach our communities.

Bypass bulk mail program is a successful rural subsidy program helping many families in all our villages. We do not want to any changes to the federal subsidies for bulk mail bypass program to rural communities.

For Calista Corporation high energy costs in our region has curtailed exploration of our mineral properties. Many mining companies do not want to explore extreme properties without affordable energy. If Donlin Creek had affordable energy it would be have been in operation by this year.

**Resolution to affordable energy**

Rural Alaskans are poorly understood and largely forgotten to resolve energy problems. High Oil prices may strength the State of Alaska Permanent Fund, but to our people in the villages it is causing great pain and grief to many families. Our Native Peoples want affordable energy as given to residents of urban communities. The past two weeks ago TransCanada contract was approved by the State Legislature to bring cheap energy to the lower forty eight states and rural Alaska Rural Alaska was just forgotten. At least rural Alaskans got a little something from the Energy Session, but it still is band-aid solution.

Nuvista Light and Electric Cooperative, Inc. fostered by AVCP, Inc. AVCP Housing, YKHC to address energy solutions. Our working group is developing short term and long term solutions we will forward to the state and of our federal government by this fall, however we want to share the preliminary draft statements developed by our working group in our region headed by Nicholas Robert Charles, head of Nuvista Light and Electrical Cooperative, Inc.

**Short Term Energy Policy Statements:**

Indicated by Public records since statehood the State of Alaska has spent $25 million on energy alternatives in our region. State has not followed through on any study. 1994 we created Nuvista to address energy studies funded with state funds. Nuvista engineer Frank Bettine led the studies to provide all alternative energy studies to the state. In the study wind power was rated high on the list for 26 villages in our region-we want these villages listed for funding for wind power.

**Resource Exploration:**

Last year Tribes in our region rescinded their long standing resolution banning oil and gas exploration of the Norton Sound, lead by the Lower Yukon Village Leadership.

Calista Corporation is the primary holder of 6.5 million acres of subsurface lands surrounding 56 villages. It is Calista Corporations intent to continue its course to offer its subsurface holdings to exploration.

Calista Corporation has numerous mineral agreements in the region, one of which is Donlin Creek. Donlin Creek has the best potential to become a world class mine, however there are two major impediments: energy and transportation, both issues are very costly to the operations of the exploration project. If we had cheap energy Donlin Creek would be in operation today.

Native regional corporations became key industries in their regions that provide jobs and income, and have enabled energy sustainability assisted in achieving energy security.

**Recommendations to Senate Indian Affairs**

We would like for the Indian Affairs Committee to develop policies to address:

- Tax incentives for wind power, hydro, tidal energy, and for development of synthetic gas from coal and bio-mass for electric power generation.
    - The Calista/AVCP region holds world class winds as indicated by the studies by the state.

  - We have multiple rivers that do not sustain any type of fisheries that can sustain hydro energy
  - We have two major rivers with great tidal energy that we need to expand further studies.
  - Development of synthetic gas from coal for electric power generation should be included for research funding to Native Regional corporations that own these properties.

- Incentives to address expansion of the Railbelt energies to western Alaska. Development of a Public/Private partnership with the Native Regional Subsurface owners with the Federal Government to address energy solutions. U.S. Congress approved formation of Office of Indian Energy under the U.S. Department of Energy. The Office of Indian Energy should develop partnership with subsurface ownership/village corporations to address energy solutions. Office of Indian Energy should fund Alaska Native corporations and Alaska Tribes in development of their energy plans.

- U.S. Congress should expand variety of alternatives such as tax incentives, bond financing for delivery of energy solutions to rural Alaska.

- Should Tribal Energy Resource Agreements be expanded to regional corporations and village corporations? In Alaska holder to subsurface lands are owned by regional corporations while the surface lands are owned by village corporations. ANCSA organizations should be eligible for under TERA. Many village corporations operate energy utility companies in rural Alaska. They should be eligible for funds under TERA.

- U.S. Senate has the power to remove the barriers and provide funds, bonding, tax incentives to resolve energy problems to rural Alaska. Resolving energy problems to rural Alaska will bring economic development, and create new jobs needed in the bush.

Rural Alaska has provided cheap energy to urban Alaska, it is time our villages are afforded same opportunity as urban Alaska is afforded on energy solutions. Resolution to rural energy issues will bring new opportunities to rural Alaskans and of our state.

Thank you for this opportunity to listen to our views. We hope we can work together to bring a new change, new attitude toward rural Alaskans, that we can be afforded fair and just cause for development of energy solutions. Rural Alaska energy solutions have been studied to death. Let's look to solutions that will change the statistics we just shared with you that resolving energy will resolve poverty statistics in rural Alaska.

In summary Alaska Native Corporations, Tribes, Village Corporations want for the U.S. Senate to implement policies that will resolve rural energy problems. Resolving energy problems to our people will bring new opportunities to our people and spur economic development in Rural Alaska.

Senator MURKOWSKI. Thank you so much, Matthew.

[Applause.]

Senator MURKOWSKI. I Appreciate your leadership. We also have with us this morning Gene Peltola. Gene has done wonderful work in the area of health care as the President and CEO of the Yukon-Kuskokwim Health Corporation, so if you can enlighten us on what's happening in the health care world as a result of higher energy prices.

**STATEMENT OF GENE PELTOLA, PRESIDENT/CEO, YUKON–KUSKOKWIM HEALTH CORPORATION**

Mr. PELTOLA. Okay, good morning, Madam Chair. I'm Gene Peltola, for the record, president and CEO of the Yukon-Kuskokwim Health Corporation. And we thank you for bringing this forum out to us here in rural Alaska.

The Yukon-Health Corporation has been contracting with Indian Health Service since before the enactment of the Indian Self-Determination Act. Today we provide comprehensive health care to 28,000, largely Yup'ik Eskimo people across a roadless area larger than the size of Oregon.

Where the average per capita income is less than 15,000. Gas in our hub city of Bethel, as stated earlier, is almost $6 per gallon. In our villages it's approaching $8 a gallon, the same price we pay for milk. When considering the high energy food and personnel costs against the IHS appropriation that does not allow for mandatory medical inflation costs, providing health care for our 58 tribes is a daily and extraordinary challenge. For the past three years YKHC has accommodated for dramatic energy increases. Regarding utility costs in fiscal year 2000 YKHC saw a 21 percent increase or a $1.1 million increase over anticipated utility costs. Fiscal years 2007 and 2008 YKHC utility costs increased on an average of 8 percent or half a million dollars. The fiscal year 2009 budget includes an anticipated 22 percent increase or another $1.4 million worth of utility costs. The total increase in utility costs for the last three fiscal years total over $3 million.

Increases related to fuel have also been dramatic. For fiscal year 2009, our freight, patient and corporate travel costs will increase over $700,000. YKHC is committed to delivering health care at a high level and expanding services where they are needed and/or financially feasible. However, with relatively flat revenues and substantially increase in expenses, the delivery of health care cannot help but be affected out here.

Although YKHC's budget amounts, our corporate totals, we should notify you of our increased costs at the village level. One of YKHC's main partners, our tribal and city governments in our 50 YKHC communities are suffering too. In our member villages, either the tribe or city governments own their respective health clinics. The governments receive a monthly rental fee from YKHC that is used for their rent, fuel, janitorial services and general upkeep. This is called an IHS Village Built Clinic Lease Program. According to IHS, current lease funding covers only 55 percent of operating costs. Many tribes and cities are requesting increased rental payments for clinics to accommodate expected utility increases. YKHC is tentatively expecting 30 percent or $187,000 to subsidize these increases.

For organizations that compact or contract IHS and BIA programs an energy solution exists that is already authorized by law, the full funding of contract support costs.

And just to give you a head's up, if Congress were to fully fund or negotiated contract support costs over 50 percent of those funds nationwide would come back to Alaska. We're so advanced over the Lower 48 in assuming IHS and BIA programs.

Over 20 years ago former Chairman Inouye of this committee wrote that the single greatest impediment to the success of tribal self-determination was a failure of the Indian Health Service to pay contract support costs. I can testify that what Chairman Inouye said in 1987 is just as true today.

In Fiscal Year 2007 YKHC's annual true shortfall exceeded $10 million for the very first time. It has gone up approximately one million each year as we seek to take on ever growing IHS programs in a climate of ever rising costs. This is truly a crisis. To give you an idea, that $10 million is true costs, it's cost of utilities, it's cost of workman's comp, it's cost of personnel benefits, and where do we make up those costs, we have to cover those costs from third-party revenues. Most people hear about contract support costs and their eyes glaze over but these are very real costs. Either the fixed costs of our overhead, such as utilities or else the cost of providing workman's compensation insurance, as I said, and health and retirement benefits to our staff, that's what contract support cost, they are fixed and they are real.

In 1992 and 1993, when we began operating the IHS hospital here in Bethel, we suffered a shortfall of over $2.2 million on contract support costs. The impact to YKHC and the region and the people we served was immediate. Over 40 positions were laid off within months after hospital operations began. Subsequent rounds of reduction in force and layoffs occurred in 1997, 2006, 2007. These events have had a very severe impact on the quality of health care that YKHC can provide, however, the impact is not just measured by the $10 million shortfall. As a result of this underpayment YKHC cannot employ as many primary care providers or provider teams. The care that those teams provide to our patients is typically billed to Medicaid, Medicare or third-party private insurance payors. The result is that the $10 million in reduced direct care services translates into approximately an additional $6 million in lost revenue from these sources. So the real loss is at least $16 million to our programs, to the people we serve, and the tribal governments that we serve. And even more when you consider that we direct those lost third-party revenues back into staffing additional teams throughout our villages.

I have four recommendations today.

First, the committee should consider requesting additional funding for energy efficiency and conservation projects for aging federal facilities like the Yukon-Kuskokwim Delta Regional Hospital. Our hospital is now over 30 years old. And we have done the necessary study, the environmental work, the engineering work, we have a membrane roof on our hospital. It's patched, it's leaking all over again, and we have determined that at a cost of $1.2 million we can replace that membrane, we can insulate that roof, put some additional insulation in the roof and we'd have a cost savings in our

heating bills immediately of $120,000 a year. But the mere funds that are appropriated by Congress to renovate and upgrade federal facilities, that type of funding is not available to Alaska. Funding for research and deployment of realistic long-term energy technologies should also be considered, especially when Alaska's potential for wind, hydro, geothermal and tidal solutions is tremendous.

YK, like has been said, is one of the four partners who's been working along with Calista and AVCP and our housing authority in developing a regional energy plan. Matthew referred to the draft version that we made available to you. There's a couple action plans in there that I want to speak about.

One is that we've decided to go forward and look at creating a fuel purchasing cooperative, made up of not only the four of us, of the CDQs, municipalities, our school districts, our utilities, our village corporations. Hopefully, we can achieve economy of scale and bring the cost of fuel in the YK-Delta down. Another thing we've been talking about, and I relate back to a discussion I had with Senator Stevens in Anchorage last winter, we were talking about the ever increasing cost of fuel and the cost of utilities in rural Alaska, and he made the comment that, Gene, what we need in rural Alaska is a refinery. And I thought to myself and for some time I gave it a lot of thought and I didn't believe then that the volume was out here in rural Alaska, in Western Alaska to be able to sustain a refinery. And just recently as the four groups were meeting, we're discussing the opportunity that the Aleut Corporation has in Adak. Basically all the supportive infrastructure for a refinery exists in Adak, along with over 20 million gallons of storage facilities already in place. They have a deep sea port. They have some of the longest runways in the state of Alaska. They're geometrically located where they can purchase fuel from Indonesia, the Sulkan Islands or Valdez. If the Chukchi leases that were just given out ever go into production for a small window during the summer, you could tanker crude right directly to them, I mean you still have to look at the volume to sustain it. They're geographically located so they could—fishing vessels in that portion of the Aleutian Chain and the Bering Sea don't have to go back up to Adak to fuel up, they are just north of the east/west North Pacific shipping lanes. And you take a look at it and not looking at longitude and latitude, but just looking at a map, they're as close or closer to Hawaii and the South Pacific Islands than the West Coast of the United States is and that's where they're barging their fuel in. And with the military requirements at Guam, I think then that you have the volume to be able to sustain an operation like that. And if our regional corporations from NANA, Bering Straits, Calista, Bristol Bay and Aleut could get together, I think a feasibility study should be determined whether that's economically feasible.

Second, the committee should consider directing the General Accountability Office to study the actual impact of the continuing shortfalls tribes are suffering in their contract payments. I am sure that YKHC's experience is not unique. And hopefully a GAO report will help energize Congress to do its part in remedying the situation. As part of the GAO study some examination should be made into IHS' new policy announced only two years ago. And that is not to provide any contract support costs whatsoever, for any new con-

tract or compact operation regardless of circumstance and notwithstanding Congress making available up to $5 million for this purpose every year. The current situation is bringing to a stop all forward progress in tribal self-determination and self-governance nationwide.

Third, the committee should examine why the IHS Village Built Clinic Lease program is currently not eligible for contract support costs and why lease funding has remained virtually the same since 1989. This is especially disheartening given tribal compactors and contractors subsidize the lease program with their own health care monies due to the sharply increasing energy costs.

Finally. I would ask the committee to look into the status of pending contract support litigation. After 12 years of litigation YKHC recently settled its old claims, but this is an exception. For other tribes with old and new claims, litigation is grinding on in various courts and boards.

The fairest approach would be for Congress to extent the statute of limitations for all tribal contractors to pursue their claims over historic IHS underpayment for prior years.

A more comprehensive approach would be a Legislative fix to create a new claim payment mechanism that would permit all tribes to receive appropriate compensation through the Judgment Fund without draining litigation that takes years to resolve.

Ultimately, receiving full contract support costs is not about money, for tribal organizations like YKHC it means being able to systematically address cancer, suicide and other major challenges like high energy costs.

It is the ability to hire a provider to perform portable mammographies in our villages to detect breast cancer early in Stage 1 when the five year survival rate is over 90 percent versus a later stage. Or our ability to hire a counselor to deploy to our communities wide behavioral health initiatives in order to save a teenager from taking their own life.

Most importantly, receiving full contract support costs is an ability to provide an array of health services to a population suffering dramatic health disparities and even pay our light bill. In an environment without full contract support costs, flat IHS appropriations and dramatically increasing energy costs, eventually YKHC, as well as other health providers in our state will have to decide on which services to cut in order to pay our light bills and fuel bills.

The funding for full contract support costs, and more importantly it's relationship to directly improving American Indians and Alaska Native Health's status is a matter entirely within Congress' power to address.

And I'd like to say that full funding of contract support costs is one small step for Congress but it's one giant leap in addressing the health care of Native Americans nationwide.

I want to thank this opportunity to thank you for bringing this committee to Bethel and giving me the honor of addressing you.

Thank you.

[Applause.]

Senator MURKOWSKI. Thank you for your leadership on the issue of contract support costs. You've come back to Washington to tes-

tify on this issue several times and I think it's been very enlightening, very helpful for the committee.

Mr. PELTOLA. And I won't give up.

[The prepared statement of Mr. Peltola follows:]

PREPARED STATEMENT OF GENE PELTOLA, PRESIDENT/CEO, YUKON–KUSKOKWIM HEALTH CORPORATION

Good morning. Madam Chairwoman and members of the Committee:

The Yukon-Kuskokwim Health Corporation has been contracting with the Indian Health Service (IHS) since before the enactment of the Indian Self-Determination Act. Today we provide comprehensive healthcare to 28,000 largely Yupik Eskimo people across a roadless area the size of Oregon, where the average per capita income is $15,000. Gas in our main hub city of Bethel is almost $6 per gallon, and in our villages it is approaching $8 per gallon, the same price we pay for milk. When considering the high energy, food and personnel costs against an IHS appropriation that does not allow for mandatory medical inflation costs, providing healthcare for our 58 tribes is a daily and extraordinary challenge.

For the last three years YKHC has accommodated for dramatic energy increases (utility and fuel). Regarding utility costs, in fiscal year 2006 YKHC saw a 21% increase, or $1.1 million, over anticipated utility costs. Over fiscal years 2007 and 2008 YKHC utility costs increased an average of 8% at $500,000.00. The fiscal year 2009 budget includes an anticipated 22% increase, or $1.4 million, in utility costs. The total increase in utility costs for the last three fiscal years totaled over $3 million.

Increases related to fuel have also been dramatic. For fiscal year 2009, our freight, patient and corporate travel costs will increase $700,000.00.

YKHC is committed to delivering healthcare at a high level and expanding services where they are needed and/or financially feasible. However, with relatively flat revenues and substantially increased expenses, the delivery of healthcare cannot help but be affected.

Although YKHC's budget amounts are corporate totals, we should notify you of our increased costs at the village level. One of YKHC's main partners, the tribal and city governments in our 50 Yukon-Kuskokwim Delta communities, are suffering too. In our member

villages, either the tribal or city governments own their respective village health clinics. The governments receive a monthly rental fee from YKHC that is used for their rental, fuel, janitorial services and general upkeep of the clinic, this is called the IHS Village Built Clinic lease program. According to the IHS, current lease funding covers only 55% of operating costs.

Many tribes and cities are requesting increased rental payments for clinics to accommodate expected utility increases. YKHC is tentatively expecting an additional 30%, or $187,000, to subsidize those increases.

For organizations that compact or contract IHS and Bureau of Indian Affairs (BIA) programs an energy solution exists that is already authorized in law, the full funding of contract support costs.

Over 20 years ago, former Chairman Inouye of this Committee wrote that the single greatest impediment to the success of tribal self-determination was the failure of the IHS to pay contract support costs. I can testify that what Chairman Inouye said in 1987 is just as true today.

In fiscal year 2007, YKHC's annual true shortfall exceeded $10 million for the very first time, and it has gone up approximately $1 million each year as we seek to take on ever growing IHS programs in a climate of ever rising costs. This is truly a crisis.

Most people hear about "contract support costs" and their eyes glaze over. But these are very real costs, either the fixed costs of our overhead, such as utilities, or else the cost of providing workers compensation insurance, and health and retirement benefits to our staff. That's what contract support costs are. They are fixed and they are real.

In 1992 and 1993, when we began operating the local IHS hospital, we suffered a shortfall of over $2.2 million in contract support costs. The impact to YKHC was immediate: over 40 positions were laid off within months after hospital operations began. Subsequent rounds of reductions in force and layoffs occurred in 1997, 2006 and 2007.

These events have had a very severe impact on the quality of care that YKHC can provide. However, the impact is not just measured by the $10 million shortfall. As a result of that underpayment, YKHC cannot employ as many primary care provider teams. The care that those teams provide to our patients is typically billed to Medicare, Medicaid, or private insurance when available. The result is that $10 million in reduced direct care services translates into an additional $6 million in lost revenues from these sources. So, the real loss is at least $16 million to our programs, and even more when you consider that we direct those lost third-party revenues back into staffing additional teams throughout our villages.

I have four recommendations.

First, the Committee should consider requesting additional funding for energy efficiency and conservation projects for aging federal facilities like the Yukon-Kuskokwim Delta Regional Hospital. Funding for research and deployment of realistic, long-term alternative energy

technologies should also be considered, especially when Alaska's potential for wind, hydro, geothermal and tidal solutions is tremendous.

Second, the Committee should consider directing the General Accountability Office to study the actual impact of the continuing shortfalls tribes are suffering in their contract payments. I am sure YKHC's experience is not unique, and hopefully a GAO report will help energize Congress to do its part in remedying the situation. As part of the GAO study, some examination should be made into IHS's new policy, announced two years ago, not to provide any contract support costs whatsoever for any new contract or compact operation, regardless of circumstance, and notwithstanding Congress making available up to $5 million for this purpose every year. The current situation is bringing to a stop all forward progress on tribal self-determination and self-governance.

Third, the Committee should examine why the IHS Village Built Clinic lease program is currently not eligible for contract support costs and why lease funding has remained virtually the same since 1989. This is especially disheartening, given tribal compactors and contractors subsidize the lease program with their own health monies due to sharply increased energy costs.

Finally, I would ask the Committee to look into the status of the pending contract support litigation. After 12 years of litigation, YKHC recently settled its old claims for approximately $42 million. But this was the exception. For other Tribes with old and new claims, litigation is grinding on in various courts and Boards.

The fairest approach would be for Congress to extend the statute of limitations for all tribal contractors to pursue their claims over historic IHS underpayments from prior years.

A more comprehensive approach would be a legislative fix to create a new claim payment mechanism that would permit all tribes to receive appropriate compensation through the Judgment Fund, without draining litigation that takes years to resolve.

Ultimately, receiving full contract support costs is not about money, for tribal organizations like YKHC it means being able to systematically address cancer, suicide, and other major challenges like high energy costs.

It is the ability to hire a provider to perform portable mammographies in our villages to detect breast cancers early in stage 1 when the 5 year survival rate is over 90% versus a later stage. Or the ability to hire a counselor to deploy a community wide behavioral health initiative in order to save a teenager from taking their own life.

Most importantly, receiving full contract support costs is the ability to provide an array of health services to a population suffering dramatic health disparities and pay our light bill. In an environment without full contract support costs, flat IHS appropriations and dramatically increasing energy costs, eventually YKHC will have to decide which services to cut in order to pay our light and fuel bills.

The funding of full contract support costs and more importantly, its relationship to directly improving American Indians' and Alaska Natives' health status, is a matter entirely within Congress's power to address!

Thank you for the opportunity and honor to address your Committee today.

The attachment ``Rural Energy Action Council Findings and Action Recommendations for Governor Frank Murkowski'' is printed in the Appendix.

Senator MURKOWSKI. Last on the panel here this afternoon is Mr. Ron Hoffman. Ron is the CEO of AVCP Housing Authority and he's also President of the Alaska Housing Authority, so, welcome.

**STATEMENT OF RON HOFFMAN, PRESIDENT/CEO, AVCP REGIONAL HOUSING AUTHORITY; PRESIDENT, ASSOCIATION OF ALASKA HOUSING AUTHORITIES**

Mr. HOFFMAN. Thank you, and good morning. For the record my name is Ron Hoffman, I am the President and CEO of AVCP Regional Housing Authority and of the Statewide Association of Alaska Housing Authorities.

I'd like to welcome each and every one of you to Bethel.

I wanted to express a special thank you and welcome to you, Senator Murkowski. Thank you for holding this hearing on an issue that is a crisis for the people of rural Alaska. I hope the information you gather can be used to craft legislation that provide both immediate relief to desperate rural Indian families and long-term solutions to the unbelievable high costs of energy in rural Alaska.

Our Regional Native Housing Authorities were created to provide safe, sanitary and affordable housing, in particular, to rural Alaska.

For example, my housing authority serves Bethel and the Wade Hampton census district area representative Alaska off the road system. We are this committee's people. The Bethel census district population is approximately 78 percent Alaska Native; Wade Hampton's population's about over 90 percent Alaska Native.

We also have unemployment rate at more than 15 and 23 percent respectfully. Looking at the numbers, the Native people of rural Alaska are living with the highest unemployment at poverty rates in the country. Factor in the crisis and you begin to have a picture of the critical need for immediate relief and a long-term solution.

Off the road system, in Hooper Bay, with a population approaching 2,000, gasoline is at $7.24 per gallon. Heating fuel is at $7.37 per gallon. In the village of Kakhonak on Lake Iliamna the gas is nearly $9 a gallon, with heating fuel at 9.25.

In May the Institute of Social Economic Research at the University of Alaska reported that in 2000, an Anchorage family spent 5.5 percent of its income on energy, while a family in rural Alaska spent 16 percent. By 2008 the Anchorage family was spending nine percent of its income on energy, the family in rural Alaska had to spend 47 percent of its family income on energy. Imagine that. The gap between the two families has more than tripled. The rural families is spending one-half of its family income on energy. Beyond the direct impact on families, energy affects the cost of doing business with increases passed on to its residents, air fares, groceries, our electric bills are through the roof. These costs are passed on to an Alaska Native population that simply cannot support them.

For the people of rural Alaska to survive two things need to happen; unemployment and poverty numbers must be brought down through funding of training for current and future jobs.

Second, we must explore all energy possibilities, including development of alternative sources of energy.

As one example, the Alaska Electrical Cooperative is using wind through lower costs and reduced dependency on fuel, projects like this should be supported by funding and tax credits.

Other solutions for consideration.

Expediting a gas pipeline from the North Slope with Alaska access to that particular energy source.

Legislation to allow and require the refining of Alaska oil here in Alaska with a product accessible to all Alaskans.

Other proposals to consider, opening ANWR for exploration and drilling.

Relaxing the excess tax on fuel for rural Alaska.

Energy and transportation subsidy for rural Alaska.

I would like to expand on this just briefly. The Housing Authority recently, or this spring procured construction materials for our housing development, the transportation cost was roughly 40 percent of the actual cost.

And the development of a central bulk fuel area, such as Gene related to Adak Naval Base.

In some places in this country, the high cost of fuel is inconvenient, in rural Alaska this winter, our families will have to decide between feeding their children or keeping warm.

This winter hundred dollar barrel oil will begin to take not just livelihood but the lives of rural Alaska.

I ask you to come up with immediate relief and a short-term solution that will allow us to get more from our present resources while we explore new technologies for safe, clean and affordable energy.

Thank you for the opportunity to testify.

[Applause.]

[The prepared statement of Mr. Hoffman follows:]

PREPARED STATEMENT OF RON HOFFMAN, PRESIDENT/CEO, AVCP REGIONAL HOUSING AUTHORITY; PRESIDENT, ASSOCIATION OF ALASKA HOUSING AUTHORITIES

Good morning. My name is Ron Hoffman. I am the President and CEO of the Association of Village Council Presidents Regional Housing Authority. I am also the President of the Association of Alaska Housing Authorities. Today I am addressing you representing the Association of Alaska Housing Authorities.

First of all, I welcome you to Bethel, Alaska and thank you for having a hearing on an issue facing all Americans and that has a great impact in the lives of the people of rural Alaska and I want to express a special thank you to our Senator Lisa Murkowski.

AAHA applauds the Senate Select Committee on Indian Affairs for coming to rural Alaska to hear first hand the effect high energy costs is having on the social and economic well being to the residents of rural Alaska. It is my hope that the information you gather in these hearings will be used to craft legislation that will provide for immediate relief for the families as well as long term solutions that provide low cost energy by exploring of all possible renewable and nonrenewable resources.

The Association of Alaska Housing Authorities is a private, non-profit 501(c)(3) corporation whose board of directors includes the executive's of Alaska's fifteen regional housing authorities and the executive director of the Alaska Housing Finance Corporation. Alaska's regional housing authorities provide housing in every part of Alaska by sponsoring a wide variety of resident initiatives with a wide range of programs and services, all geared toward increasing the supply of safe, sanitary and affordable housing by developing partnerships with local, regional, state and federally agencies.

The regional housing authorities have built over 6,000 housing units and administer over 100 million dollars in federal and state funding on an annual basis.

The regional housing authorities are providing the rural residents affordable housing activities and opportunities as well as provide jobs in the construction of the new homes and employment in the deliver of housing services. The employment and training opportunities have played a critical role in helping to sustain rural bush economies. For instance, AVCP Housing provides training and employment opportunities for local

people where in the past most of the jobs went to outside contractors who bought in their own crew with very few, if not, no jobs for local people. Today AVCP Regional Housing Authority, on annual basis, employees over 500 people contributing over $5 million dollars to the local economy.

The rising energy costs are affecting all Americans especially the residents of this region. It is also affecting the members of AAHA ability to provide critical housing opportunities that are affordable in rural Alaska.

The fuel prices in rural Alaska are much higher than urban Alaska and the lower 48. As of today, regular gas price in Anchorage is $4.36 and in Glenallen it is $4.89 per gallon. Glenallen is on the road system. The diesel prices are $4.99 in Anchorage and $5.99 in Cordova.

Bethel's gas prices are $6.16 per gallon and the diesel prices are $7.12 per gallon.

Fuel prices in rural Alaska are even higher. The gas price in Kokhanok, on Lake Iliamna, is $8.83 per gallon and $9.25 per gallon for heating fuel. In Hooper Bay, on the western Alaska coast, price for gasoline is $7.24 per gallon and $7.37 per gallon for heating fuel.

Below is a cost comparison between Anchorage fuel prices and for villages listed above:

| | | Difference | | | Difference | |
|---|---|---|---|---|---|---|
| City | Gas | Dollar | Percentage | Diesel | Dollar | Percentage |
| Anchorage | 4.36 | | | 4.99 | | |
| Bethel | 6.16 | 1.80 | 41.28% | 7.12 | 2.13 | 42.69% |
| Kokhanok | 8.83 | 4.47 | 102.52% | 9.25 | 4.26 | 85.37% |
| Hooper Bay | 7.24 | 2.88 | 66.06% | 7.37 | 2.38 | 47.70% |

Recently two state senators in Anchorage have called for an investigation on why Anchorage is paying $.75 more per gallon than the Lower 48 cities. We would request

your support that rural Alaska be part of the investigation on why rural Alaska residents are paying more than $6.00 per gallon for gasoline than the Lower 48?

In May 2008 the Institute of Social and Economic Research of University of Alaska Anchorage report on the Estimated Household Costs for Home Energy Use reported the following: The copy of the report is attached.

In 2000 a family in Anchorage spent 5.5% of their income on energy versus a family in a remote community spent 15.9% of their income. In 2008 in Anchorage a family spent 8.7% of their income on energy versus a family in a remote community spent 47% of their income. In Anchorage that was a 3.2% increase over that time period versus in a remote community an increase of 31%.

The high fuel costs are distressing and are affecting the residents of rural Alaska ability to get and keep basic energy services. With the current high fuel prices we have not seen the impact it will have to a family when it gets cold or when a family has to decide between feeding their children or heating their homes. One impact we know is it is going to get tougher.

The rising energy costs are affecting the cost of doing business in rural Alaska. When the cost of doing business rises these costs are paid by the residents of Alaska. Already we have seen the cost of air fares, cost of groceries, and electric bills go up.

Most recently AVCP Regional Housing Authority awarded a $3 million dollars materials and supply contract to build new houses in rural Alaska. 48% of this award went to the cost of transportation of materials and supplies.

The high energy costs have a ripple affect on the social and economic well beings of all Alaskans residents and especially rural Alaska residents. The high energy costs affects the business and local and regional services providers such housing authorities, local governments, school districts, and health corporations.

The Anchorage Daily News recently reported on increase of fuel prices and how it affected an electric provider in rural Alaska. The Alaska Village Electric Cooperative (AVEC) is a cooperative who provides electricity to many remote Alaskan villages. ADN reported on the fuel purchased by AVEC in 2007 and in 2008. In June 2007 AVEC paid $14 million dollars for fuel. In 2008 AVEC paid $26 million dollars for fuel. That is an 85% increase in the purchase of fuel to keep the generators operating so rural Alaskan communities can have electricity.

The Lower Kuskokwim School District is reporting that it had to increase its budget to purchase fuel for all its school in Bethel and in the villages by 82%. In FY'08 LKSD's total cost for fuel and electrical was $4,619,117. For FY'09 LKSD is projecting, based on current fuel prices and conditions, to pay $8,417,310. This estimated cost is about 12.5 % of LKSD annual budget. To put this in perspective, this is roughly the cost of 43 classroom teachers, based on average salary and benefits.

The other affect of high energy costs is employee turnover it causes for service organizations such as the school districts and health corporations. Salaries do not compete well with urban Alaska when you factor in the cost of living in rural Alaska. LKSD is reporting they are having a very difficult time recruiting and retaining teachers for Bethel. The increase in energy cost is likely to make the problem of recruiting and retaining staff.

Most recently, the City of Bethel talked about adding $200,000 to their budget to cover the increase of the monthly electric bills. The Tundra Women Coalition reported a bill of about $3,000 for the month of July. These increases will no doubt have an affect on City of Bethel and TWC's ability to provide basis services to the people that need the services.

AVCP Housing serves the Bethel Census and Wade Hampton Census Districts, which has the worst unemployment rates in Alaska at 15.6% and 23.8% respectively (State of Alaska, June 2008). Other high unemployment areas include the Yukon-Koyukuk Census District at 14.8% and the Nome Census at 13.8%. Overall, the Alaska

unemployment rate is 6.8%, while the U.S. unemployment rate is 5.7% (U.S.D.O.L., July 2008). It is my understanding the unemployment numbers are based on the number of people that are looking for work. But in a rural community there are no jobs so people are not looking for jobs so the unemployment numbers are probably higher than what is reported.

In Alaska, the poverty rate is 7.8% or 52,264 Alaska residents out of 670,053. .The Bethel Census poverty rate 20.7% (U.S. Census, 2004 est.) or a fifth of the people out of the 17,147 population (U.S. Census, 2006 est.). In Wade Hampton, the poverty rate is 26% (U.S. Census 2004) or a *quarter* of the population of 7,580 (2006 est.).

When you look at the unemployment and the poverty numbers the people of our region have already been living with the highest unemployment and poverty rates. And when you factor in the energy crisis you have a picture of how difficult it is and will be if something is not done to provide immediate relief and address the long term energy needs and the solutions of this region.,

To address the unemployment and poverty we would strongly recommend that Congress consider appropriation to provide employment training in areas of high employment and poverty rates. We have many jobs in the region but the employers need trained and skill labor force from which to hire. As an example, in the aviation industry, many local people are now commercial pilots flying for local airlines. In the education field many local people are now teachers or administrators. In the health field many local people are now working as trained professional in the health field in hospital and local clinics. In the construction field many local people are now working as projects superintendents, carpenters, plumbers, and electricians. This was made possible because of funding that provided for training. And to make a real dent in the unemployment and poverty numbers funding is needed to continue provide training for current and future jobs region.

I have spoken to you about the problems that the people and the organizations are facing in the AVCP region. These problems are real and they are happening now. Now is the time to provide solutions by appropriating funding to put the solutions into action.

I am recommending appropriating funding to put solutions into actions. This means that if we have the information or that a certain method has been studied that we take this information and fund it and put it into action. Let's use the technology that has been proven in the United States or in other parts of the world to bring relief to the American people and the residents of Alaska.

For example, the Alaska Village Electric Cooperative has taken advantage of the renewable resource of wind to address lowering costs and to reduce the dependency on diesel fuel. It is projects like this that we need to fund and explore the use in other areas that can support a wind turbine project.

Some of the areas to look at are:

- Funding built the capacity and infrastructure to produce and refine Alaska-based resources in Alaska for use by Alaskans. Today majority of Alaska crude oil is sent to refineries outside the state of Alaska. This increases the cost of fuel.
- Relaxing or waiving excise taxes on fuel.
- Reviewing current statutes and regulations and removing those which drive the cost of energy.
- Providing subsidy price of energy in rural Alaska.
- Providing subsidy for transportation costs of energy supplies.
- Developing central bulk fuel storage areas such as the Adak Naval Base.
- Supporting and funding for the development of alternative source of energy.
- Looking for ways to reduction the dependency on foreign countries for crude oil such as exploring and opening the Arctic National Wildlife Refuge.

Addressing the high energy costs is crucial to the well being to the State of Alaska and to the survival of rural communities and the preservation of a lifestyles and culture in rural Alaska.

You have heard about the problems we are facing. You have heard some of the suggestions and recommendation we have in addressing this situation. And finally I ask you to come up with the solutions that provide immediate relief to the problems we facing with an eye to providing legislation and funding for long term solution that allows us to explore and use new technologies and strategies that provide for safe, clean, and affordable energy.

Thank you for the opportunity to testify.

**Attachments**

Institute of Social and Economic Research
University of Alaska Anchorage
Web Notes

## Estimated Household Costs for Home Energy Use, May 2008

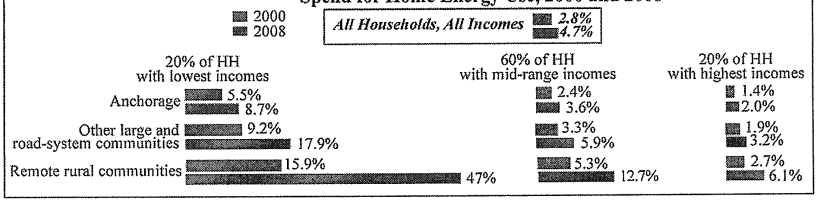
Ben Saylor, Sharman Haley, and Nick Szymoniak Note No. 1 Revised June 24, 2008

This memo estimates how much of their income Alaska households spend for home energy uses, after years of rising energy prices.[1] We made the estimates at the request of State Senator Lyman Hoffman. We include costs for electricity, heat, and other home energy uses—but do not include costs for transportation fuel. Keep in mind that these are truly estimates. Because of time lags in data collection and reporting, actual consumer price data for 2008 are not available. To estimate consumer energy prices as of May 2008, we used statistical models of the relationship between oil prices and consumer prices. We also used the most recent data on per capita personal income from the Bureau of Economic Analysis to estimate 2007 annual household income.

These estimates are likely to overstate actual household expenditures. As energy costs rise, households find ways to consume less. How much less, we don't know. For these estimates, we used consumption households reported at the time of the 2000 U.S. Census. Also, the estimates in this memo reflect what energy would cost households for a year, at May 2008 prices. Consumers of course haven't yet seen a full year at these prices, and we don't know where prices will go from here.[2] Therefore, these estimates are really like a cost index—that is, they estimate what it would cost to buy a specific amount of energy, at specific prices. That's not the same as actual annual household expenditures.

Still, these estimates give a good picture of what households in different areas of the state and at different income levels currently must spend for home energy use. The appendix explains our methods in detail. Figure 1 summarizes our estimates of the shares of household income spent for home energy use in 2008 and compares them with 2000 shares. Later tables provide more geographic and income-level detail for 2008. Remember that energy sources differ around that state, as Figure 2 will show. Figure 1 breaks Alaska into three regions: (1) Anchorage; (2) other large or road-system communities; and (3) remote rural communities. It also estimates the share of household income Alaskans with different incomes pay: (1) the 20% of households with the lowest incomes; (2) the 60% with mid-range incomes; and (3) the 20% with the highest incomes.

**Figure 1. Estimated Median Share of Income Alaska Households Spend for Home Energy Use, 2000 and 2008**




[1] This analysis builds on an earlier study, by Ben Saylor and Sharman Haley, *Effects of Rising Utility Costs on Household Budgets*, 2000-2006, March 2007. See www.iser.uaa.alaska.edu/Publications/risingutilitycosts_final.pdf

[2] World crude oil prices were hovering around $130 per barrel at the end of May, 2008. Source: U.S. Energy Information Administration. World Crude Oil Prices. http://tonto.eia.doe.gov/dnav/pet/pet_pri_wco_k_w.htm .

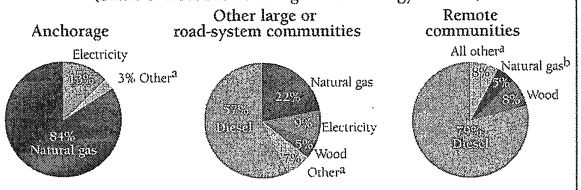
**Summary of Estimates**

Taken together, all Alaska households, at all incomes levels, typically spend an estimated 4.7% of their income for home energy, compared with 2.8% in 2000. But the variation across regions and income levels is big. Anchorage households in general spend the lowest percentage of income for energy—but the share among the poorest households was up from 5.5% in 2000 to 8.7% in 2008. Among the wealthiest Anchorage households, the share rose from 1.4% to 2%. Natural gas generates electricity and provides home-heating fuel for most Anchorage households (as Figure 2 shows). Prices of natural gas have risen sharply in recent years, but on an energy-equivalent basis, natural gas is still much less expensive than diesel (also called fuel oil). Also, incomes in Anchorage tend to be higher than in most rural places, especially in the most remote areas.

Households in other large and road-system communities typically spend—depending on their income level—anywhere from about 3% to 18% of income for home energy. That compares with about 2% to 9% in 2000. Households in some of these places have access to natural gas, but more than half rely on diesel. Many of those communities can get fuel delivered by road, which is generally less expensive than delivery by air or water.

Remote rural households, which rely mainly on diesel and can get fuel only by water or air, spend by far the biggest share of income for home energy. A recent ISER study found that prices for diesel in rural areas vary by as much as 100%, depending on how far the fuel has to travel, how difficult it is to reach specific communities, the amount of local storage capacity, the condition of local moorage and unloading equipment, and other factors.[3] Remote households with the lowest incomes face the highest costs for home energy—an estimated 47% of their income, compared with about 16% in 2000. Remote households with higher incomes must spend an estimated 6% to 13% of their incomes for home energy. Keep in mind that incomes in some remote areas—especially southwestern Alaska—are much lower than the state average. In 2005, for example, per capita incomes in southwest Alaska were roughly one third to one half below the state average.

Figure 2. How Do Alaskans Heat Their Houses?
(Share of Households Using Various Energy Sources)




[a]Any fuel type not specified. Sources of heat include natural gas, propane, electricity, diesel, coal, wood, and solar energy. [b]Barrow has access to natural gas from local wells.

Source: 2000 U.S. census

[3] Meghan Wilson, Ben Saylor, Nick Szymoniak, Steve Colt, and Ginny Fay, *Dollars of Difference: What Affects Fuel Prices Around Alaska?* ISER Research Summary No. 68, May 2008. Online at: www.iser.uaa.alaska.edu/Publications/researchsumm/RS_68.pdf

**Energy Costs in Household Budgets**

Tables 1, 2 and 3 show the costs of heating fuel, electricity and gas for Alaska households by region and income quintile. These tables are calculated from household-level data provided in the Public Use Micro-Sample (PUMS) of the 2000 Census for Alaska. Because we are using data for individual households, we calculate costs only for the households that use each energy source, and when we report median cost, it is the median among those households that use that energy source. As Figure 2 shows, 84 percent of Anchorage homes are heated with natural gas and 13 percent use electric heat. In remote rural communities 79 percent of homes use diesel fuel for heat, less than 4 percent use electricity, and the only remote community that has access to utility natural gas is Barrow. Because different households and regions use different fuel sources for heat, the most meaningful comparison across regions appears in Table 4, which aggregates all three energy sources in one table representing all Alaska households.

Our calculations of costs as a percentage of income also use household-level data on income. When we report median, it is the median of the percentages calculated for individual households; it is NOT the median cost as a percentage of median household income. This is an important distinction because energy sources and consumption vary by income, and the distribution of costs is different than the distribution of income. For example, Anchorage households that use electricity as a heat source are more likely to be renters and poor. Similarly, rural households that heat with wood are more likely to be poor.

The income quintiles are based on state-wide data: the lowest quintile is the one-fifth of households statewide with the lowest incomes. These households are disproportionately located in rural Alaska. In our tables, the lowest quintile in rural Alaska will have the same range of incomes as the lowest quintile in Anchorage, yet will represent a much larger share of households.

We note that these estimates of median energy costs as a percentage of income by region mask a great deal of variation between communities within each region, especially in rural Alaska which is geographically and economically very diverse.

Table 1 shows the 2008 projected cost of heating fuel, for those households who reported using a liquid fuel (primarily diesel) for heat , as a percentage of 2007 household income, broken out by income quintile and region.[4] You can see that at current prices, the median household in remote rural Alaska faces about $4,900 in heating bills, 9.4 percent of their household income. Very few Anchorage households use these heat sources, but for those who do the cost is smaller. (Because this table includes a very small sample for Anchorage, the individual quintile figures are not very meaningful and are omitted from the table.) In Kenai and Mat-Su the typical costs are somewhat higher than in Anchorage, but still much lower than in rural Alaska. For Fairbanks, Juneau and road accessible communities the costs are projected to be between the costs in the Kenai/Mat-Su region and remote rural Alaska, although as a percentage of income, they are somewhat lower than Kenai/Mat-Su, because proportionally more households fall into the upper income quintiles. Heating costs represent a much larger share of the budget for poor households: a median of 20

[4] The households included in Table 1 differ from those included in the corresponding table in the original report. In this update, only households who reported primarily using a liquid fuel for heating are included, whereas in the original report, all households paying anything for liquid or solid heating fuel were included.

percent of the budget for the lowest quintile of households on the road system, and a whopping 32 percent for the lowest income quintile households in remote rural Alaska.

**Table 1. Annual cost of liquid heating fuel, for those who pay, at May 2008 prices**

| Quintile | Household Income | | Anchorage | Kenai & Mat-Su | Mid-Size & Roaded | Remote Rural | Total |
|---|---|---|---|---|---|---|---|
| | | | Cost in Dollars | | | | |
| 1 | $28,715 and below | average | -- | $3,539 | $3,975 | $5,236 | $4,442 |
| | | median | -- | $2,989 | $3,520 | $4,172 | $3,985 |
| 2 | $28,716 to $52,021 | average | -- | $3,604 | $4,381 | $5,263 | $4,589 |
| | | median | -- | $2,657 | $3,520 | $4,519 | $3,985 |
| 3 | $52,022 to $78,601 | average | -- | $3,540 | $4,485 | $6,002 | $4,724 |
| | | median | -- | $3,155 | $4,225 | $5,215 | $4,172 |
| 4 | $78,602 to $119,777 | average | -- | $3,810 | $4,826 | $5,897 | $4,912 |
| | | median | -- | $3,321 | $4,225 | $5,215 | $4,225 |
| 5 | over $119,777 | average | -- | $4,124 | $4,979 | $7,022 | $5,306 |
| | | median | -- | $3,653 | $4,225 | $6,258 | $4,225 |
| | Total | average | $5,263 | $3,695 | $4,634 | $5,766 | $4,822 |
| | | median | $2,633 | $3,321 | $4,225 | $4,867 | $4,225 |
| | | | Cost as a Percentage of 2007 Household Income | | | | |
| 1 | $28,715 and below | average | -- | 61.0% | 38.0% | 62.4% | 52.9% |
| | | median | -- | 20.1% | 20.1% | 32.4% | 24.2% |
| 2 | $28,716 to $52,021 | average | -- | 9.1% | 10.7% | 13.3% | 11.4% |
| | | median | -- | 6.9% | 8.7% | 11.4% | 9.4% |
| 3 | $52,022 to $78,601 | average | -- | 5.6% | 6.9% | 9.4% | 7.4% |
| | | median | -- | 4.8% | 6.0% | 7.7% | 6.2% |
| 4 | $78,602 to $119,777 | average | -- | 4.0% | 4.9% | 6.2% | 5.1% |
| | | median | -- | 3.5% | 4.3% | 5.3% | 4.3% |
| 5 | over $119,777 | average | -- | 2.5% | 2.9% | 4.4% | 3.2% |
| | | median | -- | 2.1% | 2.5% | 4.0% | 2.7% |
| | Total | average | 8.4% | 17.5% | 10.0% | 24.0% | 15.4% |
| | | median | 4.6% | 5.0% | 4.9% | 9.4% | 5.9% |

Sources: U.S. Census Bureau (IPUMS)[5], Alaska Permanent Fund Division, Alaska Housing Finance Corporation, IRS Statistics of Income Division, U.S. Bureau of Economic Analysis, and ISER calculations

Table 2 shows the 2008 projected cost of electricity as a percentage of 2007 household income. At current prices, the median household in remote rural Alaska faces about $3,000 in electric bills, which is three times higher cost than for the median Anchorage household. This represents 6 percent of their household income, and is more than four times the budget share in Anchorage. Once again the poorest households face the largest burdens on their budgets: more than 4.5 percent of the budget for the lowest quintile of Anchorage households, and over 18 percent for low income households in rural Alaska.

[5] Steven Ruggles, Matthew Sobek, Trent Alexander, Catherine A. Fitch, Ronald Goeken, Patricia Kelly Hall, Miriam King, and Chad Ronnander. Integrated Public Use Microdata Series: Version 4.0 [Machine-readable database]. Minneapolis, MN: Minnesota Population Center [producer and distributor], 2008. http://usa.ipums.org/usa/

**Table 2. Cost of electricity, for those who pay, at May 2008 prices**

| Quintile | Household Income | | Anchorage | Kenai & Mat-Su | Mid-Size & Roaded | Remote Rural | Total |
|---|---|---|---|---|---|---|---|
| | | | Cost in Dollars | | | | |
| 1 | $28,715 and below | average | $1,012 | $1,392 | $1,744 | $3,138 | $1,744 |
| | | median | $803 | $1,145 | $1,270 | $2,585 | $1,205 |
| 2 | $28,716 to $52,021 | average | $988 | $1,577 | $1,806 | $3,441 | $1,680 |
| | | median | $803 | $1,363 | $1,588 | $3,102 | $1,235 |
| 3 | $52,022 to $78,601 | average | $1,162 | $1,577 | $2,028 | $3,940 | $1,791 |
| | | median | $964 | $1,363 | $1,764 | $3,102 | $1,339 |
| 4 | $78,602 to $119,777 | average | $1,273 | $1,571 | $2,199 | $4,234 | $1,873 |
| | | median | $1,125 | $1,363 | $1,941 | $3,619 | $1,473 |
| 5 | over $119,777 | average | $1,501 | $1,765 | $2,432 | $4,531 | $2,067 |
| | | median | $1,339 | $1,636 | $2,117 | $3,877 | $1,636 |
| | Total | average | $1,222 | $1,568 | $2,080 | $3,726 | $1,841 |
| | | median | $1,071 | $1,363 | $1,764 | $3,102 | $1,376 |
| | | | Cost as a Percentage of 2007 Household Income | | | | |
| 1 | $28,715 and below | average | 11.4% | 17.7% | 16.6% | 36.9% | 19.7% |
| | | median | 4.6% | 7.4% | 8.0% | 18.4% | 7.7% |
| 2 | $28,716 to $52,021 | average | 2.5% | 4.0% | 4.6% | 8.8% | 4.2% |
| | | median | 2.0% | 3.3% | 3.8% | 7.2% | 3.1% |
| 3 | $52,022 to $78,601 | average | 1.8% | 2.4% | 3.2% | 6.1% | 2.8% |
| | | median | 1.5% | 2.1% | 2.8% | 5.2% | 2.1% |
| 4 | $78,602 to $119,777 | average | 1.3% | 1.6% | 2.2% | 4.5% | 1.9% |
| | | median | 1.2% | 1.5% | 2.0% | 3.7% | 1.5% |
| 5 | over $119,777 | average | 0.9% | 1.1% | 1.4% | 2.8% | 1.2% |
| | | median | 0.8% | 1.0% | 1.3% | 2.5% | 1.0% |
| | Total | average | 2.9% | 5.5% | 5.1% | 15.0% | 5.5% |
| | | median | 1.3% | 2.1% | 2.4% | 6.2% | 2.0% |

Sources: U.S. Census Bureau (IPUMS), Alaska Permanent Fund Division, UA Cooperative Extension Service (with ISER updates), Chugach Electric Association, Municipal Light and Power, Alaska Energy Authority, IRS Statistics of Income Division, U.S. Bureau of Economic Analysis, and ISER calculations

Table 3 shows the 2008 projected cost of gas, both natural gas and propane (the 2000 Census had one question asking for the total cost of both types of fuel), as a percentage of 2007 household income. The only remote rural community with access to access to natural gas is Barrow, but households using propane are also included in this table. Although remote rural households pay less for gas than households in Anchorage, their incomes tend to be lower, so as a percentage of income the median cost share is greater. In Anchorage, the poorest households pay around nine percent of their income for gas heat, while the richest pay about 1.3 percent of their income. In the Mid-Size & Roaded region, gas costs are lower, which is not because gas and propane are cheaper, but because a large number of households use another fuel type for heating but use a small amount gas for other purposes.

**Table 3. Cost of gas, for those who pay, at May 2008 prices**

| Quintile | Household Income | | Anchorage | Kenai & Mat-Su | Mid-Size & Roaded | Remote Rural | Total |
|---|---|---|---|---|---|---|---|
| | | | Cost in Dollars | | | | |
| 1 | $28,715 and below | average | $1,870 | $2,227 | $915 | $1,965 | $1,847 |
| | | median | $1,695 | $1,607 | $527 | $1,072 | $1,449 |
| 2 | $28,716 to $52,021 | average | $1,762 | $2,372 | $1,186 | $2,122 | $1,916 |
| | | median | $1,671 | $1,744 | $791 | $1,340 | $1,572 |
| 3 | $52,022 to $78,601 | average | $1,879 | $2,117 | $1,549 | $1,754 | $1,894 |
| | | median | $1,695 | $1,818 | $1,054 | $1,139 | $1,646 |
| 4 | $78,602 to $119,777 | average | $1,998 | $1,913 | $1,696 | $2,058 | $1,957 |
| | | median | $1,941 | $1,695 | $1,212 | $1,286 | $1,794 |
| 5 | over $119,777 | average | $2,309 | $2,239 | $1,612 | $1,754 | $2,202 |
| | | median | $2,187 | $2,039 | $791 | $1,243 | $2,039 |
| | Total | average | $2,019 | $2,156 | $1,412 | $1,950 | $1,984 |
| | | median | $1,892 | $1,759 | $791 | $1,206 | $1,744 |
| | | | Cost as a Percentage of 2007 Household Income | | | | |
| 1 | $28,715 and below | average | 21.7% | 25.5% | 10.9% | 28.7% | 22.6% |
| | | median | 9.1% | 9.8% | 3.7% | 8.4% | 8.8% |
| 2 | $28,716 to $52,021 | average | 4.4% | 5.9% | 3.0% | 5.6% | 4.8% |
| | | median | 3.8% | 4.3% | 1.8% | 3.3% | 3.8% |
| 3 | $52,022 to $78,601 | average | 3.0% | 3.2% | 2.4% | 2.7% | 2.9% |
| | | median | 2.6% | 2.8% | 1.4% | 1.8% | 2.5% |
| 4 | $78,602 to $119,777 | average | 2.1% | 2.0% | 1.7% | 2.2% | 2.0% |
| | | median | 2.0% | 1.7% | 1.3% | 1.3% | 1.9% |
| 5 | over $119,777 | average | 1.3% | 1.4% | 1.0% | 1.1% | 1.3% |
| | | median | 1.3% | 1.2% | 0.4% | 0.7% | 1.2% |
| | Total | average | 4.1% | 7.0% | 3.8% | 10.5% | 5.4% |
| | | median | 2.1% | 2.5% | 1.4% | 2.7% | 2.1% |

Sources: U.S. Census Bureau (IPUMS), Alaska Permanent Fund Division, Alaska Housing Finance Corporation, Regulatory Commission of Alaska, Enstar Natural Gas, Fairbanks Natural Gas, Barrow Utilities and Electric, IRS Statistics of Income Division, U.S. Bureau of Economic Analysis, and ISER calculations

Table 4 shows all three energy sources combined. This table represents current energy costs for all Alaska households. If rural Alaskans maintain their energy consumption at 1999-2000 levels, at current prices they are facing annual costs around $7,600. For the median household, this is about 14 percent of their income. Anchorage households pay about $2,700, about 3 percent of their income. The costs for households in Kenai and Mat-Su, Juneau, Fairbanks and other communities on the road system, are intermediate between Anchorage and remote, rural Alaska.

**Table 4. Total cost of gas, electricity, and heating fuel, for those who pay, at May 2008 prices**

| Quintile | Household Income | | Anchorage | Kenai & Mat-Su | Mid-Size & Roaded | Remote Rural | Total |
|---|---|---|---|---|---|---|---|
| | | | Cost in Dollars | | | | |
| 1 | $28,715 and below | average | $2,012 | $3,640 | $3,949 | $7,437 | $4,052 |
| | | median | $1,388 | $2,957 | $2,642 | $6,317 | $2,772 |
| 2 | $28,716 to $52,021 | average | $2,235 | $4,152 | $4,226 | $8,034 | $4,003 |
| | | median | $2,025 | $3,408 | $3,205 | $7,095 | $2,913 |
| 3 | $52,022 to $78,601 | average | $2,763 | $4,002 | $5,215 | $8,824 | $4,356 |
| | | median | $2,502 | $3,495 | $4,582 | $7,885 | $3,302 |
| 4 | $78,602 to $119,777 | average | $3,076 | $3,965 | $5,940 | $9,220 | $4,634 |
| | | median | $2,990 | $3,523 | $5,646 | $8,077 | $3,642 |
| 5 | over $119,777 | average | $3,723 | $4,569 | $6,816 | $10,450 | $5,317 |
| | | median | $3,532 | $3,946 | $6,342 | $10,004 | $4,285 |
| | Total | average | $2,882 | $4,038 | $5,378 | $8,537 | $4,505 |
| | | median | $2,735 | $3,465 | $4,934 | $7,586 | $3,504 |
| | | | Cost as a Percentage of 2007 Household Income | | | | |
| 1 | $28,715 and below | average | 22.7% | 49.1% | 38.2% | 90.4% | 47.3% |
| | | median | 8.7% | 18.7% | 17.5% | 46.8% | 17.2% |
| 2 | $28,716 to $52,021 | average | 5.5% | 10.4% | 10.5% | 20.4% | 10.0% |
| | | median | 4.7% | 8.4% | 7.9% | 17.6% | 7.1% |
| 3 | $52,022 to $78,601 | average | 4.4% | 6.2% | 8.1% | 13.8% | 6.8% |
| | | median | 3.9% | 5.3% | 7.1% | 11.9% | 5.1% |
| 4 | $78,602 to $119,777 | average | 3.2% | 4.1% | 6.0% | 9.8% | 4.8% |
| | | median | 3.2% | 3.7% | 5.8% | 8.7% | 3.8% |
| 5 | over $119,777 | average | 2.2% | 2.8% | 4.0% | 6.5% | 3.1% |
| | | median | 2.0% | 2.3% | 3.7% | 6.1% | 2.5% |
| | Total | average | 6.2% | 15.0% | 12.4% | 36.3% | 13.5% |
| | | median | 3.2% | 5.2% | 6.0% | 14.4% | 4.7% |

Sources: U.S. Census Bureau (IPUMS), Alaska Permanent Fund Division, Alaska Housing Finance Corporation, Regulatory Commission of Alaska, UA Cooperative Extension Service (with ISER updates), Enstar Natural Gas, Fairbanks Natural Gas, Barrow Utilities and Electric, Chugach Electric Association, Municipal Light and Power, Alaska Energy Authority, Anchorage Water & Wastewater Utility, IRS Statistics of Income Division, U.S. Bureau of Economic Analysis, Alaska Energy Authority, and ISER calculations

**Appendix: Methodology**

This analysis builds on a previous study, *Effects of Rising Utility Costs on Household Budgets, 2000-2006.* Please refer to the appendix of that report for a complete discussion of that methodology.[6]

All money amounts are in nominal dollars (not adjusted for inflation).

**Income**

Our earlier report used household-level data from the Public Use Micro Sample of the 2000 Census, and used a variety of data sources to project the households' incomes for 2005. We estimated and used different projection factors by income as well as by region to support our analysis of utility costs by income quintile. For this update our methodology was less detailed. Using our 2005 projected household incomes as the starting point, we projected household incomes to the 2007 calendar year using ratios calculated from U.S. Bureau of Economic Analysis personal income data. We calculated the per capita personal income for 2005 and 2006 from borough/census area-level BEA data[7] for each of our four regions, which we call Anchorage (Census PUMAs 101 and 102), Kenai & Mat-Su (PUMA 200), Mid-Size & Roaded (PUMA 300), and Remote Rural (PUMA 400). 2006 was the latest year for which BEA income data was available. From these income figures, we calculated a ratio of change from 2005 to 2006, and squared it to estimate the change from 2005 to 2007. In the 2000 IPUMS dataset[8], we multiplied our originally projected 2005 household incomes by these four ratios by region to obtain a projected 2007 income. We also recomputed the quintile groups based on 2007 income. Because the BEA data does not differentiate by income level, we made no adjustments in the change in household incomes by quintile – they only differ by region, although the effects of the 2005 income quintile adjustment are still present.

**Heating Fuel**

For this update, as for the original report, in the census category of heating fuel ("oil, coal, kerosene, wood, etc.") we projected only the cost of diesel fuel for home heating, ignoring any change in the price of other fuels that would fall into this category. We made this projection only for households who responded that "Fuel oil, kerosene, etc." was the primary heating fuel.

To project heating fuel costs to 2008, we calculated a separate ratio of price change for each region. The denominators are the 1999 estimates calculated for the original report. The numerators are projected prices assuming $130 per barrel crude oil, which is where world crude oil prices were hovering by the end of May.[9] We estimated these using four linear regressions

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[6] Available from http://www.iser.uaa.alaska.edu/Publications/risingutilitycosts_final.pdf

[7] Regional Economic Information System, Bureau of Economic Analysis, U.S. Department of Commerce. Table CA04. http://www.bea.gov/regional/reis/CA04fn.cfm

[8] Steven Ruggles, Matthew Sobek, Trent Alexander, Catherine A. Fitch, Ronald Goeken, Patricia Kelly Hall, Miriam King, and Chad Ronnander. *Integrated Public Use Microdata Series: Version 4.0* [Machine-readable database]. Minneapolis, MN: Minnesota Population Center [producer and distributor], 2008. http://usa.ipums.org/usa/

[9] U.S. Energy Information Administration. World Crude Oil Prices. http://tonto.eia.doe.gov/dnav/pet/pet_pri_wco_k_w.htm

(one for each region) with crude oil prices[10] as the independent variable and population-weighted[11] fuel oil prices from Alaska Housing Finance Corporation surveys as the dependent variable. The AHFC surveys used were conducted at the end of 2000, 2004, 2005, 2006, and 2007. We averaged the prices for heating oil #1 and #2. The corresponding crude oil prices were the averages of the last three months of these years. We used the coefficients from the regressions to predict fuel oil prices given $130/barrel crude oil. We then multiplied each household's annual costs of heating fuel as reported in the 2000 Census by the ratios for each region.

**Gas**

The cost of gas category in the 2000 Census includes other types of fuel besides natural gas (e.g. propane, but not gasoline). As in the original report, we imputed whether each household used primarily natural gas or something else. For households that did not use natural gas, we applied a propane price ratio. For households that used natural gas, we used our previous estimate of 1999 gas consumption along with current prices.

The method for estimating 2008 propane prices, based on $130/barrel crude oil, is exactly parallel to the fuel oil projection described above. We used propane prices from the same AHFC surveys and did regressions on the same crude oil prices, using the resulting coefficients to predict average 2008 propane prices for each region, then a ratio of change from 1999 to 2008.

The natural gas prices we used are the current rates, as of this writing, from Enstar, Fairbanks Natural Gas, and Barrow Utilities and Electric. Based on the estimated consumption level of each household in CCF from the original report, we calculated the cost of a year's worth of gas at the current rates according to region and whether the household used natural gas.

**Electricity**

For Anchorage, we obtained current electric rates from Municipal Light & Power and Chugach Electric. As before, we weighted the price of 1000 kWh in a month from each utility by the approximate number of residential customers (we did not update the customer counts). We applied the new ratio of the current price over the 1999 price to Anchorage households.

As before, for Kenai & Mat-Su (PUMA 200) and Mid-Size & Roaded (PUMA 300), we obtained data from the Cooperative Extension Service Food Cost Survey– the cost of 1000 kWh of electricity in each of the surveyed communities. The data was for the first quarter of 2008, and so was out of date. We acquired from web sites and phone calls the current rates from the utilities serving communities in these two regions. We only used the communities that had data for both 1999 and 2008. We computed unweighted average prices for the two regions and two new ratios of price change from 1999 to 2008, and applied the ratios to households in these regions.[12]

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[10] U.S. Energy Information Administration. Dataset: U.S. Refiner Acquisition Cost of Crude Oil. Series: U.S. Crude Oil Imported Acquisition Cost by Refiners. http://tonto.eia.doe.gov/dnav/pet/pet_pri_rac2_dcu_nus_m.htm

[11] Due to time constraints, population used for weighting for all years but 2007 was 2000 population. We weighted 2007 survey prices by 2007 population.

[12] We omitted the Power Cost Adjustment from Alaska Electric Light & Power Company, serving Juneau, because it is unusually and temporarily high due to the recent avalanche that damaged the hydroelectric system. We also took a weighted average of the two different seasonal rates from this utility.

Rural Alaska (PUMA 400) electric rates were modeled and projected from Power Cost Equalization (PCE) monthly data[13]. We estimated the electric utility diesel purchase price with $130 oil using linear regression analysis for each community using crude oil prices[14] as the independent variable. Generator efficiency and non-fuel cost per kWh were calculated with PCE monthly data and were used with the estimated fuel cost to estimate the electric rate for each community. A weighted average for rural Alaska communities was calculated based on its number of residential customers. The model calculated all prices in real terms. To adjust the ratios back to nominal-dollar terms, we multiplied them by the ratio of the 2007 Anchorage CPI to the 1999 Anchorage CPI.

**Water and Sewer**

We did not project water and sewer costs for this update, and these costs are not included the total energy costs tables in this update.

[13] PCE monthly data was made available by the Alaska Energy Authority. Annual data is available at their website: http://www.akenergyauthority.org/

[14] U.S. Energy Information Administration. Dataset: U.S. Refiner Acquisition Cost of Crude Oil. Series: U.S. Crude Oil Imported Acquisition Cost by Refiners. http://tonto.eia.doe.gov/dnav/pet/pet_pri_rac2_dcu_nus_m.htm

Senator MURKOWSKI. Thank you. I have a whole series of questions that intended to ask, unfortunately I'm not going to be able to do as many as I would like because it's already 11:45 and we still have our last panel to hear from. So what I intend to do is submit those questions to you and ask that you respond to them as part of the record.

I would like to ask a question, though, and this follows up from one of the questions that I asked the first panel in terms of con-

servation. And we recognize that when it comes to our housing there are things that we can do, the programs that the State has with weatherization, the energy assistance programs that are out there, but to be eligible for at least one of the state programs, an energy audit is required. Do I understand that AVCP is working to train auditors, do we have any auditors out here, can we even take advantage of these State funds out in the rural areas right now?

Ron.

Mr. HOFFMAN. Please allow me to respond to that.

Senator MURKOWSKI. Yes.

Mr. HOFFMAN. Over the past couple months the Housing Authority has been actively supporting and sponsoring training for our residents, and we do have certified individuals right now that are able to conduct energy audits.

Senator MURKOWSKI. How many do you have, do you know?

Mr. HOFFMAN. It's well over 10.

Senator MURKOWSKI. Well, the word that I hear in Anchorage is, yes, we've got energy auditors, but we don't have enough and it is fully a six month wait to get an energy auditor into your home and, of course, you've got timelines that are at play. So we set up programs with all wonderful intentions and then we don't have the individuals that can move through the eligibility requirements. So I'm pleased to know that there's 10. I'm hopeful that they're actually able to get out and to respond to the community needs.

Mr. HOFFMAN. Yes. We plan to expand that training program for, you know, our region, but we are establishing other training programs. In fact, the Association of Alaska Housing Authorities plan to go ahead and sponsor such a training program.

Senator MURKOWSKI. That would be helpful.

Mr. HOFFMAN. The legislative appropriation for the weatherization, you know, came forth very quickly and I'd like to thank and recognize Senator Hoffman for his sincere efforts in expediting this process. Then we were under emergency regulations in May, then we finally got the final regulations, so that there impacted as to how we do business. And, of course, one of the mandates was that we have an energy audit or an assessment on a unit prior to utilizing those dollars. But I feel confident that we will overcome this and we will, you know, renovate and weatherize the homes that are badly needed, especially in our region.

Senator MURKOWSKI. Gene, I wanted to ask you one quick question. Back in Washington several months ago, you indicated to me that one of your concerns about your increasing costs was what you—what YKHC would anticipate spending for medivac's because of the cost of fuel to fly the medivacs. What have you experienced this summer in terms of your costs due to increased fuel for your medivac operation?

Mr. PELTOLA. Senator. Our medivac costs of this summer, since the advent of fuel being barged out here this spring, has gone up significantly. And like you said earlier, we're finding that the acuity of the medivacs coming in from the villages to our hospital are greater because they can't afford to come in when——

Senator MURKOWSKI. So they delay care.

Mr. PELTOLA. Pardon?

Senator MURKOWSKI. They delay care coming into town.

Mr. PELTOLA. Yes. And then we ship a medivac out when acuity gets to the point that they need to be medivac'd into Bethel or on to Anchorage.

Senator MURKOWSKI. So not only are you seeing increased costs to your budget, but you're seeing patients coming in that are probably higher risk than they would have been?

Mr. PELTOLA. Yes. And then another step we're working on is we anticipate our efforts between Providence Alaska and their LifeGuard Program and our AeroMed Program, we've been working for a number of months now to merge those two into one comprehensive effort, medivac operation, and achieve economy of scale and that should take place around November 1st this year.

Senator MURKOWSKI. Good. Hopefully that will make a difference. I want to applaud AVCP and Calista and those that are part of the regional plan here for really taking that initiative and setting forth proposals. I think as the State works through its plan and incorporating the various regional plans that have been proposed, that's how we get the best operations put together, is when it comes from the ground up. You know better out here what works rather than us in Washington saying, we think that, you know, the entire state of Alaska needs to be powered by X, Y or Z. The solutions coming from the ground up are very important so I appreciate your leadership on that.

With that, I'll thank the members of the panel and you can look forward to my questions and, again, if you'd like to supplement your testimony we welcome that.

And we will come to the final panel please.

[Applause.]

Senator MURKOWSKI. Gentlemen, thank you for coming so far to be with the committee here today and to be with the people of Bethel and the region. I think you've heard from the previous two panels that there is no issue that is more paramount in the minds and in the lives of those out in the region, whether it's individuals or whether it's from the health care, education perspective, energy is it. We welcome you today. Appreciate the fact that you have traveled from Washington, D.C., to present your testimony. Again, the easy thing for this committee to do in a field hearing would have been to stay in Anchorage but I don't think that you get the full perspective by staying in Anchorage, so I think the extra flight out here allows you an opportunity to see another part of our incredible state and to perhaps gain a deep appreciation of what we face here.

We will start here this morning with Mr. Steve Morello, who is director of the Indian Energy Policy and Programs with the Department of Energy. Mr. Morello, we've had an opportunity to have many conversations before, appreciate your leadership and if you can provide your testimony to the committee.

Thank you.

**STATEMENT OF STEVEN J. MORELLO, DIRECTOR, OFFICE OF INDIAN ENERGY POLICY AND PROGRAMS, DEPARTMENT OF ENERGY**

Mr. MORELLO. Thank you, Madam Vice Chairman. My name is Steven J. Morello. I am the Deputy Assistant Secretary for Intergovernmental and External Affairs at the Department of Energy and I'm also the director of the Office of Indian Energy Policy and Programs. I'm a proud citizen of the Bawating Anishinabeg people, the first people of the rapids, federally recognized as the Sault Ste Marie Tribe of Chippewa Indians. I'm delighted to be here to have this opportunity to discuss with you energy solutions for Alaska Native communities.

And before I turn to my prepared remarks, I want to take an opportunity to thank Dr. Robert Middleton, who has been my partner during the past year that I have been in office, the Department of Interior has worked very, very closely with the Department of Energy and we have tried to marshal our resources so that together we're more powerful than if we were separated for the benefit of Indian country and for the Alaska Native people.

Since Secretary Bodman named me to be the first Director of the Office of Indian Energy Policy and Programs just a year ago in September of 2007, I have made it a personal priority to visit Indian country and Alaska in order to assess the serious energy challenges facing tribes and Alaskan Natives, while also exploring the tremendous opportunities for the development of renewable energy resources. This trip marks my fourth visit to Alaska in my capacity as director and during each of these trips I have had the privilege of meeting Alaska Native people and understanding their issues. Clearly, the most pressing issue facing the Interior villages is the high cost of energy. My real concern is that if we do not find a way to provide affordable energy to these villages, we could face, as soon as this winter, an out-migration of huge scale.

The best hope for long-term relief is to implement a portfolio approach using various renewable technologies, including biomass, geothermal, solar, wind and hydro. In tandem, a robust regional transmission grid could allow Alaskans to be energy independent and lead to a net export of some excess electricity. Likely short-term solutions are the combination of conservation and energy efficiency measures with small localized biomass generators located in the Interior villages to replace the diesel powered generators currently being used there. Additionally, some villages may well generate electricity from hydro, solar or wind as well.

The role of private investment in the success of these energy solutions is important because if the power generating projects have customers much of the power generating capacity can be financed privately. Since my time as director, I have worked closely to try to bridge the gap between Native people seeking out sources of investment funding and private sources who recognize that assisting Indian Country and Native Alaska is just good business.

The Department of Energy is committed to being a good partner in search for a solution to the energy shortfalls in the rural Alaska Native villages. For example, the Tribal Energy Program within the Office of Energy Efficiency and Renewable Energy is currently

soliciting requests for information to identify ways to accelerate renewable energy development in the Alaska Native villages.

I'd like now to provide more specific details regarding the types of renewable energy projects that could help solve the energy crisis in Interior Alaska.

I'll begin with Biomass.

Interior Alaska is well situated for using biomass resources because of its tremendous supply of wood waste and fish oil processing at the villages. The development of a model project to demonstrate the success of biomass in Alaska is essential. Furthermore, Alaskan villages could employ local people to participate in the entire production chain from the cultivation and harvest of the biomass material to the building, operation and maintenance of the generation facility.

I'm pleased to report that just this month the Department of Energy announced plans to make available up to $2.2 million for two renewable energy project awards selected for negotiation, pending further collection of data and environmental review, based on this competitive solicitation. One of which is aimed at advancing biomass in an Alaskan village and serving as the model project demonstrating the viability of this technology in rural Alaska. The Council of Athabascan Tribal Governments, under the Fort Yukon Wood Energy Project, plans to use wood fuel from a region rich in forest resources to displace diesel fuel being used for heating. The project plans to displace up to 30,000 gallons of fuel oil annually, typically flown or barged into this community by using biomass to heat the Ft. Yukon school and gym.

The prospect of stand-alone biomass units are another area of potential for Alaska. Portable generating units that rely on biomass may be ideally situated for power production in the remote villages of Alaska. I'm hopeful that future progress will make this a viable option for Alaska villages in the short-term.

Geothermal.

Geothermal's another renewable energy resource that is found in many Native American lands and Alaskan lands as well. According to the geothermal resource map of Alaska, there's a geothermal resource belt located throughout the NANA region.

The Department of Energy is funding a feasibility study that is currently underway with the NANA Corporation in attempting to ascertain the geothermal power generation potential for remote offroad village scale application.

Further, the Department of Energy's Geothermal Program has provided $565,000 and $1.2 million respectively for a geothermal resource assessment and technology demonstration of low temperature geothermal power plant in Alaska at Chena Hot Springs outside of Fairbanks.

Solar.

The promise of solar power is another important consideration for Alaskan Natives. The Department of Energy has funded several feasibility studies on the potential of solar power for off grid use in the remote villages. And I want to also commend the efforts of the Cold Climate Study Group at the University of Alaska-Fairbanks, because they are studying—leading the way in Alaska in studying the various applications of solar throughout the state.

Wind.

The State of Alaska has wind resources that could allow cost competitive wind energy production. The Department has supported five wind feasibility projects including the Sealaska Native Corporation, among others, here in the state. And I recently met with representatives of the American Wind Power Association who expressed that many of their commercial members are seriously interested in pursuing wind projects here in Indian Country and in Alaska. My role will be to continue to forge these partnerships between commercial entities and tribal constituencies.

Transmission issues.

An essential part of a long-term solution to the problem of power in Alaska's Interior villages and elsewhere for that matter is a regional power grid. I have become aware of an important study by the Southeast Conference to address the concept of building a network of power transmission lines connecting most of the communities in the region. This Southeast Alaska Inter-Tie study includes the delivery of hydro generated electricity to several of the Alaska Native villages in the region. The Department of Energy officials from the Office of Energy Delivery and Energy Reliability provided technical assistance to the researchers, and we believe this report could provide important data regarding transmission requirements in Alaska and we look forward to reviewing the findings.

I also want to bring to the committee's attention to what's being to other states for leading the country with regard to renewable energy as a potential road map for what might be done here in Alaska.

California's Renewable Energy Transmission Initiative (RETI) is a statewide program to help identify the transmission projects needed to accommodate renewable energy goals, support the future energy policy and facilitate transmission corridor designation, siting and permitting. The RETI will assess all competitive renewable energy zones that can provide significant electricity to California's consumers by the year 2020, and will identify those zones that can be developed in the most cost effectively and environmentally benign manner.

In Texas, the Competitive Renewable Energy Zones (CREZ) are being designated in the most viable areas of the state. An electric transmission infrastructure will be constructed to move renewable energy from those zones to markets where people use the energy the most. The state's transmission operator is charged with collecting wind data and nominating a number of CREZ's based on the transmission cost calculation for each CREZ. In other words, they are putting the transmission where the renewable energy is and not expecting that you can't build renewable energy in a certain place because there is no transmission.

The Department of Energy has long recognized the renewable energy production potential on American Indian and Alaska Native land. We look forward to continued successful relationships with tribal governments as we work together to meet the growing demand for affordable, clean and reliable energy, especially in the midst of the particular crisis of energy costs here in Alaska.

This concludes my statement, and I would be pleased to answer any questions the committee may have.

[The prepared statement of Mr. Morello follows:]

PREPARED STATEMENT OF STEVEN J. MORELLO, DIRECTOR, OFFICE OF INDIAN ENERGY POLICY AND PROGRAMS, DEPARTMENT OF ENERGY

Vice Chairman Murkowski, I am Steven J. Morello, Deputy Assistant Secretary for Intergovernmental and External Affairs, Director of the Department of Energy's Office of Indian Energy Policy and Programs, and a proud citizen of the Sault Ste Marie Tribe of Chippewa Indians. I would like to thank you for the opportunity to discuss energy solutions for Alaskan Natives.

**Introduction**

Since Secretary Bodman named me to be the first Director of the Office of Indian Energy Policy and Programs in September 2007, I have made it a personal priority to visit Indian Country and Alaska in order to assess the serious energy challenges facing Tribes and Alaskan Natives while also exploring the tremendous opportunities for the development of renewable energy resources there. This trip marks my 4th visit to Alaska in my capacity as Director. During each of these trips I have had the privilege of meeting Alaskan Native people and understanding their issues. Clearly the most pressing issue facing the interior villages is the high cost of energy needed to heat and light their homes and workplaces. My real concern is that if we do not find a way to provide affordable energy in these villages we could face, as soon as this winter, an out migration of huge scale.

The best hope for a long-term relief is to implement a portfolio approach using various renewable technologies including biomass, geothermal, solar and wind. In tandem, a robust, regional transmission grid could allow Alaskans to be energy independent and lead to a net export of some excess electricity. Likely short term solutions are the combination of conservation and energy efficiency measures with small localized biomass generators located in the interior villages to replace the diesel power generators currently being used almost exclusively. Additionally, some villages may well generate electricity from hydro, solar or wind sources as well.

The role of private investment in the success of these energy solutions is important because if the power generating projects have customers much of the power generating capacity can be financed privately. Since my time as Director, I have worked closely to try to bridge the gap between native people seeking out sources of investment funding, and private sources who recognize that assisting Indian Country and Native Alaska is just good business.

The Department of Energy is committed to being a good partner in searching for a solution to the energy shortfalls in rural Alaskan Native villages. The Tribal Energy Program within the Office of Energy Efficiency and Renewable Energy is currently soliciting information to identify ways to accelerate renewable energy development in Alaskan Native villages. The deadline for this Request for Information is September 19, 2008.

I'd now like to provide more specific details regarding the types of renewable energy projects that could help solve the energy crisis in interior Alaska.

**Biomass**

Interior Alaska is well-situated for using indigenous biomass resources because of its tremendous supply of wood, wood waste, and fish oil processing at the villages. The development of a model project to demonstrate the success of biomass in Alaska is essential. Furthermore, Alaskan villages could employ local people to participate in the entire production chain from the cultivation and harvest of the biomass material to the building, operation, and maintenance of the generation facility.

I'm pleased to report that just this month, the Department of Energy announced plans to make available up to $2.2 million for two renewable energy project awards selected for negotiation, pending further data collection and environmental review, based on a competitive solicitation, one of which is aimed at advancing biomass in an Alaskan village and serving as the model project demonstrating the viability of the technology in rural Alaska. The Council of Athabascan Tribal Governments (CATG), a consortium of ten remote villages along Alaska's Yukon River, under their Fort Yukon Wood Energy Project plans to use wood fuel from a region rich in forest resources to displace diesel fuel used for heating. The project plans to displace 30,000 gallons of fuel oil annually, typically flown or barged in to this community, by using biomass to heat the Fort Yukon School and gym. The award will be cost-shared, with the Council of Athabascan Tribal Governments providing a proposed $1.1 million and DOE providing up to $1.0 million.

The prospect of stand-alone biomass units are another area of potential for Alaska. I am aware of on-going efforts in the private sector to pilot the use of wood chips

to produce biomass off the grid. Portable generating units that rely on biomass unit may be ideally situated for power production in the remote villages of Alaska. I'm hopeful that future progress will make this a viable option for Alaskan villages in the short term.

**Geothermal**

Geothermal is another renewable energy option on many Native American lands. According to the geothermal resource map of Alaska, there is a geothermal resource belt located in the Northwest Alaska Native Association (NANA) region. The communities of Deering, Buckland, Kotzebue, Shungnak, Ambler and Kobuk may have access to this resource. Local knowledge of geothermal pools in the vicinity of Deering, Buckland and Shungnak, coupled with exploratory wells in Kotzebue documenting hydrothermal resources at 160 degrees Fahrenheit further indicate that there is geothermal power generation potential in the NANA region.

As a result of Department of Energy funding for a feasibility study that is currently underway, the NANA Regional Corporation (NRC) is attempting to ascertain the geothermal power generation potential for a remote, off-road, village-scale application.

Further, the Department of Energy's Geothermal Program has provided $563,000 and $1.2 million respectively (53 percent of the total cost) for a geothermal resource assessment and technology demonstration of a low-temperature geothermal power plant in Alaska at Chena Hot Springs Resort outside of Fairbanks. The 400kW geothermal power plant, designed and built by United Technologies Corporation, was brought online in July 2006 and is pushing the envelope for low-temperature power generation. Again, this and other projects like it will act as models for the deployment of renewable energy heat and/or power systems throughout the State.

**Solar**

The promise of solar power is another important consideration for Native Alaskans. The National Renewable Energy Laboratory estimates that there is potential from ten to fourteen $kWh/m^2/day$ of solar use during the summer months in portions of northwestern and southern Alaska.

DOE has funded several feasibility studies on the potential of solar power for off-grid power use in remote villages. One such study addresses the villages of Venetie and Arctic, located above the Arctic Circle in northeast Alaska. These villages studied the feasibility of powering the villages using solar energy during the season of the midnight sun. The solar electric photovoltaic systems currently installed are replacing diesel generator power during the summertime, and proving solar can be a viable option in rural Alaska.

**Wind**

The State of Alaska has wind resources that could allow cost competitive wind energy production, especially along its coasts and western regions, many of which exist in rural Alaskan tribal communities. The National Renewable Energy Lab estimates that at least 30 communities have wind energy production potential. The Department has supported five wind feasibility-related projects including the Sealaska Native Corporation, the Yukon-Kuskokwim Health Corporation, the Bristol Bay Native Corporation, the Kenaitze Indian Tribe, and the Aleutian Pribilof Islands Association.

I recently met with representatives of the American Wind Power Association who expressed that many of their commercial members are seriously interested in pursuing wind projects in Indian country. My role will be to continue to forge partnerships between commercial entities and tribal constituencies.

These projects are just a few examples of renewable energy options. Please see the attachment, Table 1, which lists all Alaskan Native renewable energy projects funded through DOE's Tribal Energy Program.

**Transmission Issues**

An essential part of a long term solution to the power problem in Alaska's interior villages, and elsewhere for that matter, is a regional power grid.

I have become aware of an important study by the Southeast Conference to address the concept of building a network of power transmission lines connecting most of the communities in the region. This Southeast Alaska Intertie Study includes the delivery of hydro-generated electricity to several of the Alaskan Native Villages in the region. DOE officials from the Office of Electricity Delivery and Energy Reliability provided technical assistance to the researchers. We believe this report could provide important data regarding transmission requirements in Alaska, and look forward to reviewing the findings.

California's Renewable Energy Transmission Initiative (RETI) is a statewide program to help identify the transmission projects needed to accommodate renewable energy goals, support future energy policy, and facilitate transmission corridor designation, siting, and permitting. RETI will assess all competitive renewable energy zones that can provide significant electricity to California consumers by the year 2020, and will identify those zones that can be developed in the most cost effective and environmentally benign manner.

In Texas, Competitive Renewable Energy Zones (CREZ) are being designated in the most viable areas in the state. An electric transmission infrastructure will be constructed to move renewable energy from those zones to markets where people use the most energy. The state's transmission operator is charged with collecting wind data and nominating a number of CREZs based on transmission cost calculations for each CREZ.

EPAct 2005 and The Energy Security and Independence Act (EISA) of 2007 contain initiatives, to be implemented by DOE's Office of Electricity Delivery and Energy Reliability, to bolster transmission development and modernization. EPAct 2005 contains several transmission-related initiatives, one of which required the Department to designate National Interest Electric Transmission Corridors, which will help to put transmission development on an equal footing with other alternatives to relieving electric transmission congestion by giving the Federal Energy Regulatory Commission (FERC) back-stop siting authority. Title 13 of EISA has provisions furthering the development of a Smart Grid as well as Energy Storage technologies, helping to foster the type of modernization our existing transmission will need to keep pace with rapidly growing energy demand and a changing fuel supply mix.

EPAct 2005 also required the Department to work with other federal Agencies to designate energy transport corridors. The Office of Electricity Delivery and Energy Reliability recently begun scoping for the designation of energy transport corridors in the Eastern States, Alaska, and Hawaii. A Notice of Intent to conduct a Programmatic Environmental Impact Statement regarding corridor designations in these remaining 39 States will soon be published by the Agencies.

Also, as the challenges to continued electric reliability are not only technical, but also structural, DOE is also working to harmonize the multitude of State and Federal regulatory rules such that they complement, rather than conflict with each other. Today, a key challenge to timely development of the appropriate network of wires and other facilities required to reliably deliver new electricity to American consumers is the rigorous and lengthy State and Federal authorization requirements. Hopefully, addressing these regulatory rules will provide us with solutions to apply in Alaska.

**Conclusion**

The Department of Energy has long recognized the renewable energy production potential on American Indian and Alaskan Natives land. We look forward to continued successful relationships with tribal governments as we work together to meet the growing demand for affordable, clean and reliable energy, especially in the midst of the particular crisis of energy costs in Alaska. This concludes my prepared statement and I would be pleased to answer any questions the Committee may have.

Attachment 1: DOE Funded Alaskan Projects

| # | Applicant Name | Technology | Fiscal Year | DOE Funding | Cost Share | Competitive or earmark* |
|---|---|---|---|---|---|---|
| 1 | NANA Regional Corporation (Geothermal) | Geothermal Feasibility Study | 2007 | $149,988 | $46,840 | Competitive |
| 2 | NANA Regional Corporation (Wind) | Wind Energy Feasibility Study | 2007 | $149,990 | $44,323 | Competitive |
| 3 | Council of Athabascan Tribal Governments | Biomass Heat and Power & Biomass Delivery Feasibility Study | 2007 | $149,997 | $0 | Competitive |
| 4 | Hughes Village Council (Consortium of AK Villages) | "First Steps" Capacity Building for Efficiency | 2007 | $100,000 | $8,061 | Competitive |
| 5 | NANA Regional Corporation | Strategic Energy Plan & Energy Options | 2007 | $100,000 | $95,922 | Competitive |
| 6 | Port Graham Village Council | Biomass (Woody biomass for heat and power for cannery) | 2006 | $141,368 | $7,584 | Competitive |
| 7 | Aleutian Pribilof Islands Association | Wind (Village) | 2005 | $186,887 | $0 | Competitive |
| 8 | Kenaitze Indian Tribe, IRA | Solar/Wind | 2004 | $45,769 | $3,679 | Competitive |
| 9 | Native Village of Venetie Tribal Government | Solar | 2003 | $222,234 | $41,480 | Competitive |
| 10 | Bristol Bay Native Corporation (BBNC) | Primarily Wind and/or Hydroelectric | 2003 | $121,582 | $0 | Competitive |
| 11 | Sealaska Native Corporation | Wind, Micro-Hydroelectric, and Solar | 2002 | $198,280 | $0 | Competitive |
| 12 | Yukon-Kuskokwim Health Corporation | Wind Power | 2002 | $116,310 | $0 | Competitive |
| 13 | Metlakatla VRLA Battery Monitoring | 1.4 MWh battery system | 1996-2002 | $185,000 | $170,000 | Competitive |
| 14 | Alaska Battery/Diesel/PV-Hybrid, modeling (HYBSIM), Test Bed System at Lime Village | Battery/Diesel/PV | 1999-2002 | $853,000 | $130,000 | Competitive |
| | | | | | | |
| Total DOE Funding | | | | $2,720,405 | $547,889 | |

* The Administration supports funding through a competitive, merit-based selection process.

Senator MURKOWSKI. Thank you, Mr. Morello, appreciate your traveling all the way.

And now the last individual to speak before us this afternoon, Mr. Bob Middleton, who's the director of Indian Energy and Economic Development at the Department of the Interior. Welcome Mr. Middleton.

**STATEMENT OF DR. ROBERT W. MIDDLETON, DIRECTOR, OFFICE OF INDIAN ENERGY AND ECONOMIC DEVELOPMENT, DEPARTMENT OF THE INTERIOR**

Mr. MIDDLETON. Thank you, Madam Chair. And thank you so much for inviting the Department of Interior to this important field hearing.

I'm going to keep my remarks very short. We have the written statement that we put forward. I know that we're under a little bit of time constraint, so I just want to mention a few things.

I've been fortunate enough as a career Department of Interior employee to travel to Alaska quite a bit, probably over 20 times during my career and I've seen energy issues in Alaska go from being an inconvenience to a concern, and then most recently from being a concern to being a crisis. And it's not a crisis of dollars and cents so much as a crisis of social and cultural issues. When we see the out-migration from villages to more urban areas, we see a destruction of the social fabric in many areas. And I believe that this is unacceptable in 21st Century America.

I have several programs that we manage at the Department of the Interior that I think could be of benefit and provide some solutions. But as Mr. Morello pointed out, we've been working very closely in partnership since he took office because I believe that we do need these partnerships, and it needs to be more than the Department of Interior and the Department of Energy. We need to include USDA, we need to include Department of Commerce, Small Business Administration, as well as the corporations, the State, Congress and the Native villages themselves. But I think that a partnership that comes together to look at the various programs that we all could bring to bear would be able to allow us to find solutions to the crisis that we're now facing.

Three programs that I'd like to point out that are in my office that I think could come to bear and provide some of those solutions are a Work Force Training and Development Program. Most of the Alaska Native villages participate in the Public Law 102–477 program, which allows the participants to commingle federal dollars that come from the Department of Commerce, HHS as well as the Department of Interior to provide work force training, and up to 25 percent of those funds can, in fact, be used for economic development activities.

As we face solutions in Interior Alaska on the energy issues, I would really like to see my program being used in such a way that we train folks, in fact, address the energy issues that are facing the remote areas, providing the training needed to be able to either build, manage or operate remote energy systems. I think this is one solution. It also will keep the dollar cycling in the villages as opposed to hiring somebody from the outside to come in to either repair or manage these systems.

We have the Guaranteed Loan Program in my office. It provides an opportunity, where we can, to be able to use the Guaranteed Loan Program to provide the capital investment for developing renewable energy resources. We think there are opportunities for us to be innovative in this so that we can, in fact, look at the savings that may come from putting in a remote—a renewable energy sys-

tem and use that to service loans that would be able to put these facilities in place.

We're currently working with the city of Nome, looking at the wind energy project they have there and we're also working with the city of Hoonah, or the village of Hoonah to look at the Inter-Tie program. I was just down there last month talking with them about that and we're trying to find innovative ways to use that.

And then, of course, I have an Energy and Minerals Development Program. And we have several projects that are going on in Alaska looking at geothermal resources, looking at wind resources to try and find the resources that could be put in place that will allow us to do some of this renewable energy development to defray some of the costs.

Economic development for us means not only finding ways to find jobs and businesses to create economies but also cost avoidance and this is a very important issue.

With that, I'd like to close my remarks. I thank you again for the opportunity and I'm willing to take some questions to see if we could find additional solutions.

[The prepared statement of Dr. Middleton follows:]

PREPARED STATEMENT OF DR. ROBERT W. MIDDLETON, DIRECTOR, OFFICE OF INDIAN ENERGY AND ECONOMIC DEVELOPMENT, DEPARTMENT OF THE INTERIOR

Good morning, Madam Chairwoman and Members of the Committee. My name is Bob Middleton, and I am the Director of the Office of Indian Energy and Economic Development (IEED) at the Department of the Interior. Thank you for the opportunity to present testimony today concerning the potential economic development opportunities available for Alaska Native communities through energy resource development.

The Department believes that responsible development of the energy resources of Alaska Native communities can be a significant component of their economic viability and help to sustain their traditional way of life. In general, energy and mineral development represents a possible near-term solution for many tribes and Alaska Native communities to pursue economic development, small business, and job creation for their members.

**OVERVIEW**

The U.S. Department of the Interior assists tribes, Alaska Native Corporations, villages, individual Indians and Alaska Native landowners in developing their renewable and non-renewable resources. This activity includes collection of exploratory data and identification of energy resources, funding of and assisting in feasibility studies, market analyses and other resource development initiatives, as well as overseeing leases and agreements for oil, natural gas, coal and industrial mineral deposits located on Indian lands in the lower 48 and Alaskan Native Allotments.

The Department is also responsible for developing, implementing and reviewing bureau-wide policies, plans, processes, environmental impact studies, industry leasing activities, and other functions related to development and production of energy and mineral resources on Indian lands in the lower 48 and Alaskan Native Allotments. We provide advice and data concerning geotechnical, economic, and land-use issues to tribes, individual Indian landowners, and Alaska Natives who seek to manage and develop their energy and mineral resources. While Alaska Native Corporations carry out these activities on behalf of their shareholders in Alaska, as stated, we do provide this assistance to individual Alaska Native landowners who are developing their resources. We also provide assistance in negotiating beneficial working agreements with developers, and guidance through an often complex and time-consuming regulatory approval process.

We recognize that Alaska Native communities face some of the same economic issues common to many rural communities in the U.S., such as lower rates of investment, lack of local job opportunities, and access to educational and job training services. However, the economic pressure on Alaska Native communities is intensified when you have to pay the highest utility rates in America, which can be up to six times the national average cost of 11 cents per kilowatt-hour.

These communities suffer from a reliance on electrical power supplied by diesel fuel that is very rare in the lower 48. When these energy costs are combined with some of the lowest per capita incomes in the United States, individual members of these communities are forced to choose between living in their rural communities or moving to an urban setting thereby having to shift away from their cultural and spiritual ties of living a subsistence lifestyle. Dependence on expensive and unreliable energy sources can have profoundly stifling effects on the vitality and viability of Alaska Native economies.

**OFFICE OF INDIAN ENERGY AND ECONOMIC DEVELOPMENT**

The Office of Indian Energy and Economic Development reports to the Assistant Secretary for Indian Affairs and strives to actively build and strengthen Indian economies nationwide through

job creation, business development and capital investment. The office has a multi-disciplinary staff of professionals committed to achieving long-term goals of promoting Indian economic development, increasing tribal business knowledge, increasing jobs and businesses, increasing capital investment, and providing assistance for developing energy and mineral resources.

We recognize the challenges that face Alaska Natives and have worked with local villages and corporations to develop projects and programs to provide economic development opportunities for their communities.

The focus today is on energy resource development, but I would like to take a moment to give a few examples of how IEED works with Alaska Native communities across the economic development spectrum.

The IEED manages the Public Law 102-477 initiative which allows tribal entities to combine several Federal Government social service assistance and workforce development programs into one, thereby creating administrative and technical efficiencies that enhance the effective delivery of services. IEED's approved "477" plans with Alaska Native Villages and Corporations cover over 92 percent of Alaska's tribes.

The IEED also manages the Indian Loan Guarantee, Insurance, and Interest Subsidy Program which provides to potential lenders to individual Indian, tribally, or Alaska Native owned businesses a Federal guarantee for up to 90 percent of the amount of the loan. The backing of the Federal government can provide the assurance a lender may need before they choose to enter into partnership with a Native-owned enterprise.

One of our recent successes in Alaska is the provision of a guarantee on a $4.45 million loan for an Alaska energy service provider to purchase, install, and commission a new gas turbine generator to add additional capacity to its current operation through upgrading of existing facilities and associated distribution systems that will allow the company to increase the scale of their generating capability. This loan would not have been made without the Federal guarantee of repayment.

In June 2007, IEED collaborated with the Alaska BIA Regional Office to conduct an Alaskan Economic Development and Energy Conference at the Egan Convention Center in Anchorage. The agenda included an introduction to all the services our office provides; training on the Indian Affairs Loan Guaranty and Insurance Program, government procurement; and Small Business Administration 8(a) tribally and Indian owned business formation; and law and lending for tribes, Individual Indians, and Alaska Natives. The conference also featured a networking session to link lenders with tribal and Alaska Native borrowers and a panel on creating gas and oil related jobs.

**ENERGY RESOURCE DEVELOPMENT**

As I stated before, Alaska Native villages have a unique energy situation. While rising energy costs certainly present problems for those of us who live in the lower 48, the consequences for Alaska Native communities, which are mostly rural, are alarming. The energy crisis impacts rural Alaska on both the individual and community level: when communities spend more on fuel, they spend less on key services. Presented with these options, and in the face of the current upward trend of energy prices, it has been reported that many rural residents are abandoning traditional lifestyles for more urban settings, thus devastating these longstanding vibrant rural communities.[1]

Diesel fuel driven generators provide a majority of electricity in rural Alaska. Because nearly all rural native villages generate their electricity locally using diesel generators, it is a balancing act each year for these communities. Diesel in Alaska is expensive at any time, with reported prices of $9 per gallon or higher. Estimating how many gallons of diesel need to be stockpiled when it can be transported less expensively during the warmer months is an important decision. Order too much and a village has spent money it may need for other goods and services. But, order too little, and it quickly becomes very expensive to have diesel transported to the bush during the winter months, again spending money that may be needed for other things.

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[1] *Solutions to Alaska's Energy Crisis*, Kirsten Kinegak-Friday, Alaska Native Policy Center, Summer 2007

The Institute of Social and Economic Research (ISER) at the University of Alaska-Anchorage issued a report which estimates that rural households face utility costs that are 50% higher than in 2000. Specifically, according to ISER, for a gallon of diesel fuel, prices went up 83 percent in rural communities from 2000 to 2006.[2] And consider that the price for a barrel of oil in 2006 was $58 while in 2008 the average price, to date, has been over $100 per barrel[3].

To facilitate energy resource development, IEED works with Alaska Native communities to provide the technical assistance they need to move from energy resource assessment to the development and job-creation phase. We try to assist the community by helping to develop market studies, business plans, economic analysis, and lease negotiation that reflects their economic, environmental and social needs. Our major objective is sustainable resource development that focuses on employment and income to the Native community.

We are providing tribes, villages, and Alaska Native Corporations with access to state-of-the-art knowledge and geo-scientific based modern analysis of their energy resources to allow them to perform the following critical functions:

a) strategic planning,
b) formulation of economic and energy policies,
c) development of sound environmental policies, and
d) negotiation of sound business agreements with energy industry developers.

Some of our recent efforts involve IEED staff working with several of the Alaska Corporations and villages to establish a more economical and reliable energy source for the villages and islands. Our efforts are complicated by the high-cost environment that exists in getting both staff and equipment to remote Native communities as well as increased cost for necessary services to conduct engineering projects and scientific data gathering.

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[2] *Effects of Rising Utility Costs on Alaska Households*, ISER Research Summary, October 2006
[3] Inflation Data.com, www.infationdata.com/infation/Infation_Rate/Historical_Oil_Prices_Table.asp

In addition, the window of time to gain access to get onsite to conduct activities is often limited by weather and other environmental conditions in rural Alaska.

This is why IEED has pursued partnerships with other Federal agencies, such as the Department of Energy (DOE) to leverage resources in the hope that our combined effort can get results, where working alone might not. In early June, I along with Steven Morello, DOE Deputy Assistant Secretary for Intergovernmental and External Affairs/Director, Office of Indian Energy Policy and Programs, visited with representatives of Native Alaska communities to hear directly from them about their energy resource issues and to determine where our agencies could work in partnership to develop a coordinated approach to identify potential solutions.

IEED has been approached by numerous communities for support on geothermal projects. The State of Alaska has completed preliminary surface geology mapping at many of these communities and documented the geothermal resources that are present. We have supported the communities of Unalaska and Adak on the Aleutian Islands. Both communities are currently generating their electricity using diesel fuel.

Geothermal prospecting involves finding an underground fracture system that can provide sufficient quantities of heat, steam and water. These three components are necessary for a successful project. To find a fracture system, and to significantly increase the success of the project, shallow seismic refraction studies are often done to locate the well and identify the most prospective drilling depth.

For example, Unalaska has nearby thermal vents emitting steam and would be a good candidate for electricity generation using steam. We are working with the community to perform a geothermal assessment. The community is barging a drilling rig into the area to drill a municipal water supply well. This rig could be also be used to drill geothermal wells in the region. The mobilization costs for bringing in equipment are extremely high so it would be prudent to drill multiple holes while the rig is available. Unalaska currently is the home to an active fishing fleet and cannery, so any increased access to energy resources could benefit the local community as well as local businesses.

Our second project area is on Adak Island, which formerly housed a large Department of Defense (DOD) facility. Numerous steam vents line the coast in the harbor near Adak and the community has access to an extensive power line grid. However, the island's electrical generation facilities are powered by diesel powered generators to supply the electric needs of the 70 residents. There is a part-time cannery operation on the island supported by a small fishing fleet. In addition, DOD left behind a 2.8 million gallon fuel supply tank that has the potential to store fuel for ships in the area and provide some job potential. The addition of geothermal generation would greatly reduce energy costs in the area.

At both of these communities, IEED proposes acquiring and processing seismic data in an effort to locate the ideal site for a rig to drill an exploration borehole to help identify the optimal site for a future power generation facility.

In addition to the Adak and Unalaska projects, we are working with several other communities to leverage potential grant funds from the Department of Energy's Tribal Energy Program to create a coordinated seismic data gathering program that shares the mobilization costs so that the seismic data can be gathered in sequence using the same equipment. IEED would then provide data analysis and assist with geologic interpretations.

In addition to geothermal development, IEED is also assessing potential wind projects that would enhance energy reliability for some villages. One example is the Aleutian Pribilof Islands Association (APIA) where, in 2005 and 2006, IEED provided a total of $256,000 in funding to conduct environmental and feasibility studies necessary to develop wind power in this area.

These APIA communities, including Attu, Adak, Atka, St. Paul, St. George, Akutan, King Cove, Unga, Belkofski, Pauloff Harbor, False Pass, Nelson Lagoon, and Sand Point, are currently wholly dependent upon imported diesel fuel for their energy (electricity and heat) needs. However, the entire APIA area enjoys high enough level winds that are ideal for generating electricity. IEED's grants have helped APIA communities develop a deep penetration, hybrid wind/diesel energy generating regime.

APIA used IEED funds to conduct an eagle monitoring study and hold two community informational meetings concerning the impact of two 500kW wind turbines currently under development. IEED funds also paid for further documentation of Sand Point's Environmental Assessment. The U. S. Fish and Wildlife Service (USFWS) requested pre-construction surveys and post-construction monitoring for bald eagles in the vicinity of the two installation sites. APIA's onsite biologist worked with the Sand Point Tribal Council to compile local knowledge concerning eagle behavior and flight patterns in the area, developed an observation plan for both proposed sites, conducted seasonal population surveys for eagles in Sand Point, and created a two-year monitoring plan for eagle interaction with the installed turbines. APIA documented community comments and questions and saw to it that concerns were addressed. The primary deliverable for IEED's funding was the documentation required by USFWS. An intangible deliverable was an increase in Sand Point tribal capacity to conduct environmental analysis in support of renewable energy development.

IEED's grant also allowed APIA to retain an appropriate technology firm to develop a plan to assist the Nikolski IRA Council design and plan a greenhouse to make use of the excess electricity that has been produced from the oversized wind turbine that was installed in the summer of 2007. Finally, the funding enabled APIA to research project financing options and assist communities to develop financing proposals.

IEED is also assisting all of the Native communities it is working with to perform an economic evaluation for all of the renewable projects, as well as working on several other energy-related potential business opportunities in the region that include pipelines, propane distribution, and municipal waste to gas projects. It is no exaggeration to say that cheaper and more accessible electricity are keys to the economic survival of Native Alaska communities.

**SUMMARY**

In closing, energy resource development for Native Alaska communities is essential. With the current high price environment for traditional energy sources and the high demand for both

traditional and renewable energy sources and technologies Alaska Native communities are well situated to use their natural resources to enhance their local economies and stand to benefit greatly from the development of alternative energy sources as a hedge against rising crude oil and natural gas prices.

The Department believes that energy resource development can help foster strong Indian communities with sustainable economic development by promoting and supporting the creation of jobs, capital investment, Indian-owned businesses, and a trained workforce.

Senator MURKOWSKI. Well, thank you. I appreciate your involvement in not only the energy issues, but from the perspective of the Interior and your focus on some of our challenges that we face here in the state.

Let me ask both of you, in terms of the technical assistance that might be made available to areas such as the Bethel region here, you had an opportunity to hear the comments from the other panelists. We've got programs within the state, we heard from the Alaska Energy Authority in terms of what may be available there, the fact that the State has just recently established a renewable energy fund, so we're putting together the pieces, where it seems like we could use a little more help to facilitate is how we bring this all together. Do you have within the respective departments, Energy and Interior, programs or opportunities that could be made available to provide for the technical assistance? Let's say we get beyond identifying where the resource is, you've spoken of some of the geothermal projects that you're working out on the Aleutian chain, what can you offer in terms of ideas and concepts from the federal perspective that we could dovetail more closely with what is available at the State, for both of you?

Mr. MIDDLETON. Both of our programs can provide technical assistance. We have geoscientists that can provide some of the same skills necessary that the Department of Energy could bring to bear, but we also have other programs that, I think, are greatly in need.

One of the technical assistance aspects that was raised today was the need for grant writing. And we actually have a number of programs we started in my office to look at bringing in academia to help tribes and we've been taking advantage of it mostly in the Lower 48 but we've formed business partnerships with many of the leading business schools across the United States, where we provide some funding to a tribe to, in fact, hire a top notch graduate student and their faculty advisors to come in and develop economic models, to look at business plans, to develop the financial instruments that tribes need to take to the capital investment market, and it's worked very well. We've had close to eight or nine projects that we've moved forward over the last couple of years that have shown some great results. As a matter of fact the model is so good we're moving that to the engineering schools and we're going to be working with academic engineering schools to be able to provide the tribes with that skill that they need to look at for civil engineers for community planning or electrical engineers for utility work and many of the tribes are very interested in this opportunity.

But we also have the opportunity to, in fact, provide the wherewithal for tribes or Native Alaska villages to bring in the experience they need to start looking and applying for grants.

Senator MURKOWSKI. Do you get many requests from the tribes in Alaska for assistance?

Mr. MIDDLETON. We have not to this point but——

Senator MURKOWSKI. Why do you assume that is?

Mr. MIDDLETON. I think it's simply that they're unaware of the program right now. My office really was only put into effect in 2005 and so we're still expanding and we're still getting the word out the capabilities our programs can bring. I have had a chance to talk

to a number of folks in Alaska over the last couple of years and we're getting an increase in interest and we're finding ways to make our programs better known.

Senator MURKOWSKI. Are you planning on attending the AFN Convention this year?

Mr. MIDDLETON. Yes. I was there last year and I plan on getting up there, unfortunately there is a conflict with NCAI also this year.

Senator MURKOWSKI. I'm just thinking out loud here that it would be a good opportunity to spread the word in terms of the availability of these grant opportunities, these training programs because I think this is an area where we do recognize there's a gap there and we're not quite able to figure out how we get from where we are over here to access whether it's those federal grant monies, so just making that more readily known, I think, it would be helpful and I would encourage you to do that.

I'm assuming that you heard the comment that Matthew Nicolai made in stating the concern that village corporations can't access certain energy grants. Can either one of you speak to that issue and tell me what it is that we need to do to make sure that there is the ability to access.

Mr. MIDDLETON. I think he was specifically referring to Title V of the Energy Bill 2005, which is part of my programs, the Tribal Energy Resource Agreements that can be developed. And unfortunately the legislation specifically excluded Alaska villages and corporations from the activities under that provision of the bill. I'm not exactly sure why, I wasn't working on that at the beginning when the legislation started. But I think that early in the 2000s when the legislation was being developed and starting to be incorporated into the previous energy bill that people were focusing in on more of fossil fuels, oil, gas and coal, and they really weren't thinking in terms of renewable energy resources, which I believe the—if included in Title V would be available to Alaska Native villages, but unfortunately as the legislation moved through the process, they were excluded.

Senator MURKOWSKI. That was in the 2005 Energy Act. In the most recent energy independence, is there anything that we included in that that would provide for greater access?

Mr. MIDDLETON. No. But beyond being specific to Title V of the Energy Bill of 2005, I mean there are opportunities for the Alaska villages and corporations to take advantage of some of our other programs that would deal with energy issues.

Senator MURKOWSKI. Well, and, of course, part of that problem, though, is providing the funding——

Mr. MIDDLETON. Yes.

Senator MURKOWSKI.—so that the Native corporations could avail themselves of that——

Mr. MIDDLETON. Yes, sure.

Senator MURKOWSKI.—and that's something that we would certainly like to work with you on is to ensure that we don't just put the authorizing language into play but then have nothing to show for it as a consequence of that.

Mr. MIDDLETON. Yes.

Senator MURKOWSKI. I think in order for these programs to have success, we've got to put our money where we've said there was a priority there.

Mr. Morello, can you speak to what might be available through the Department of Energy that could be made available, whether it's technical assistance, grant writing assistance, is it pretty much in line with what Mr. Middleton has stated here?

Mr. MORELLO. Well, one of the—or four or five of the crown jewels of the Energy Department are technology labs, our Los Alamos Lab, our Sandia Lab, our Idaho National Lab, NREL lab that we have in Golden, Colorado, each of these labs are hot houses of scientific research in various aspects of energy also including renewable energy. And while these labs don't offer grants, what they do offer is, in their contracts with the Department, is the opportunity for tribes and Alaska Native villages and other organizations to approach them with technical problems. They will seek to provide solutions to these technical problems without charge. And we have a tribal liaison at each of the labs and I'd be happy to assist anybody that has a technical problem that wants to go into the lab for assistance. But a perfect example of this is the Desert Rock Project, the coal to electric project that the Navajo Nation just had permitted by the EPA. One of the outstanding issues with that permit was how to sequester carbon, and we have is a lab that is studying that very diligently and is working with that tribe on carbon sequestration techniques. The same kind of issue comes up when you want to do coal to liquid, which is a very viable option here in Alaska, which has recently been announced as a project that the Crow Nation is going to undertake in Montana. There's a concern that in the coal to liquid process there may be some carbon released so we're looking at ways to capture that carbon and sequester it in the ground.

Those are technical advisory services which our labs can provide to Indian Country and to Native Alaska and which we're delighted to do.

Senator MURKOWSKI. So if you wanted to provide for some hydrokinetic energy project in a river, tap the currents there but the concern is we don't want to interfere with the fish in the river, obviously a huge subsistence resource here——

Mr. MORELLO. Sure.

Senator MURKOWSKI.—you're not going to trade your energy for your food source.

Mr. MORELLO. Right.

Senator MURKOWSKI. Are you saying that we could tap the brains there at Sandia and Los Alamos and say, help us figure out a way that we can have the energy resource without impacting the fishery resource?

Mr. MORELLO. Yes. If there is a technical question with regard to how to do that project, we'll find an expert somewhere in our labs and put them to work on it to assist the——

Senator MURKOWSKI. All right. We'll work with you because we need to figure out a way to get there without impacting the fisheries resource there.

I think the concern that I have heard from Alaskans is we've got the resource back in Washington, D.C., through Energy, through

Interior but we don't see how it translates out here in Alaska, we don't see how it translates out into rural Alaska. You've given some examples of where you are working with us on various projects, of course, we know the geothermal up in Chena Hot Springs, but, again, the issue is, well, you've got $563,000–$565,000 here, you've got a million dollars there, but as you can see the need here is enormous and the initiatives that we will have to undertake in order to allow for a level of energy security in this, in all parts of the state, I think, are going to be challenging, so we need to work with you to make sure that the funding is there for the good programs that we have put in place. We've been very frustrated that the Indian Energy Programs as authorized under the Energy Act in 2005 just, we haven't seen that momentum, and it's not just here in Alaska, it's all over Indian Country. And I think that is a reality that we should not have accepted. And I think we're now seeing, because of the high energy prices, a push on a lifestyle, a subsistence lifestyle, a culture that has been part of this land from time immemorial, and we kind of reach a tipping point, if you will, and I think we're seeing out here in many parts of Alaska that you will have that destruction of a culture brought about by energy that is not accessible unless we all act, and we is everyone in this room. It's those at the federal level, it's those at the State level, at the local and the tribal and the personal, the individual in their home, their families.

I will tell you I'm very concerned with where we are as a nation right now in terms of our energy insecurity. We've got challenges, we're going to be working on those when we get back to Washington, D.C., but from a state perspective I'm very concerned about the people that I represent and how many of those people—how many of them and their families are going to make it through the winter. And I know they're going to be calling me, I know they're going to be calling Bob and Nancy and Lyman and our new representative here, and they're going to be seeking quick and easy answers and we simply have quick and easy answers.

We need to be working with you for these longer term solutions. And they're difficult and they're often very, very costly. But the consequence, I think, of inaction is not acceptable. The answer is not for the people in this region to move to town, and we should not have situations in place where people are forced to leave their home land, leave the land that they grew up on and their grandfathers and their great-grandfathers grew up on because they simply can no longer afford to live here and because their subsistence lifestyle is no longer sustainable. So we've got a lot of work to do.

[Applause.]

Senator MURKOWSKI. I will work with all of you. We will work with all of you.

I want to thank all of the witnesses that have joined with us this morning. Many of you have come from quite a ways away but it was, again, very significant to be here in Bethel.

I want to thank the University of Alaska, the Kuskokwim campus, I want to thank AVCP, the Native leadership here in the YK–Delta. I also want to thank Senator Dorgan, the Chairman of this Committee, Senator Dorgan has been a wonderful Chairman to work with on the Indian Affairs Committee. He has some chal-

lenges in his home state of North Dakota as well and we have an opportunity to talk about those challenges. I keep telling him that one of these days I'm going to go visit some of the reservations in North Dakota and I'd like to be able to bring him here and introduce him to some of you fine people.

Again, we do invite any written comments and testimony that people would care to submit.

I apologize that our forum doesn't allow for additional oral testimony but all of the comments that you have heard today, as well as any supplements that they might be willing to submit, will be part of the official record. The hearing record will be kept open until, as I said, Friday, September 12th. And your comments will be printed in the official record, the government printing office will print this up sometime in the next couple months, copies will be made available free of charge, all you need to do is contact our office, we'll make sure that you receive that. Your comments can be emailed to *testimony@indian.senate.gov,* and, then, again, if you would prefer to submit comments by mail we will give you an address to send them in.

I do hope that from this hearing this morning, we have spurred people's creative juices. We've caused you to think about, not only the problems, but what the potential solutions may be. I firmly believe that with all of the challenges that we face in this state brought about by Mother Nature and our beautiful geography, and all that it has to offer, our problems are all solvable, that we have more options and certainly more options when it comes to energy sources than any other state in the union, and it's just up to us to figure out how we use our creative juices to tap into them. And we haven't had to over these past years because we've been able to just—families have been able to get by, now we're at that point where it's much more difficult and we need to be more creative and we need to be more collaborative. But I fully believe that even with these very large challenges that face us, we can figure out the path forward to sustainable communities brought about because we have sustainable renewable affordable energy. So that's what we're going to be working for.

I have a huge action list after my 24 hours in Bethel and I thank you for what you have given me, and I thank you for what you have given to the Committee by sharing the record today.

And, with that, we will adjourn the hearing and thank you for your participation.

[Whereupon, the Committee was adjourned.]

# A P P E N D I X

PREPARED STATEMENT OF CARL BERGER, EXECUTIVE DIRECTOR, LOWER KUSKOKWIM ECONOMIC DEVELOPMENT COUNCIL

Thank you for the opportunity to submit written testimony for inclusion in the field hearing, regarding the effects of the energy crisis on Alaska's people, especially in rural Alaska and across the Yukon Kuskokwim Delta.

My name is Carl Berger, for 16 years I have been the executive director of LKEDC, one of eleven Alaska regional economic development organizations (ARDORs) representing most areas of Alaska. Organized as a 501(c)(3) non- profit organization, our mission is to advance Alaska natives and rural residents of the Y–K Delta toward economic self sufficiency, by promoting small business and economic development activities in Bethel and 26 surrounding villages.

An ongoing problem toward local enterprise and small business development in our region are the high costs of electricity, motor gas and diesel fuel used for home heating throughout our region of mostly treeless tundra. With the most recent increases in these product costs, the problems to local residents are greatly exacerbated. Though the State of Alaska has maintained a Power Cost Equalization program for a number of years, its benefits do not extend to small businesses, who have to pay the full cost of power, currently 0.36c/kWh in Bethel and much higher in the surrounding villages. Likewise, an energy rebate to all Alaskans eligible for the Permanent Fund Dividend, recently granted by the state legislature in the amount of $1,200 is woefully inadequate to rural residents, who will be paying over $6–8/gal for motor gas and diesel home-heating fuels. Maintaining heat in all the sub-standard housing throughout our region at these prices will certainly be a budget buster for most of us. Finally, the proposed energy rebate paid out in this way is subject to federal taxes, further diminishing its effect.

The following are recommendations, for the Senate Indian Affairs Committee's consideration:

1. The United States and State of Alaska governments need to take immediate action to subsidize transportation of all fuel types to rural Alaska.

2. Ongoing renewable energy project grants need to be provided to rural communities, in order to harness wind energy, biomass, solar and hydro power as available, and assist the tribal governments to develop their alternative energy.

3. The SOA Power Cost Equalization program needs to be modified to include commercial small business users in its energy savings plan.

4. Buy down the debt of rural utilities in order to reduce costs passed on to consumers and include a price cap on fuel stock purchased.

5. Expand and support bulk fuel purchasing, transportation and cooperative purchasing agreements.

6. Invest some of our excess earnings throughout Alaska toward projects that promote renewable or alternative energy and conservation.

Thank you for the opportunity to provide this testimony. I urge you, the Senate Committee on Indian Affairs, to provide increased energy assistance or other similar actions, which will provide a much-needed solution to the energy crisis now facing our state and its citizens.

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PREPARED STATEMENT OF JOHN WALLACE, RESIDENT, BETHEL, ALASKA

I appreciate this opportunity to record my comments concerning the effect of high energy prices on our Native communities in rural Alaska.

I have lived in rural Alaska for the majority of my life. I am not an Alaska Native by blood history. I am married to a lady from Nunapitchuk and we are living and raising our family in Bethel.

As part of my life history, I have had many opportunities to travel extensively throughout the Yukon-Kuskokwim region of Alaska. As an Alaska National Guard search and rescue crewchief, I flew to almost all of the villages in the area. Presently I operate a small business, Alaska Technologies, providing technology assistance and Internet installations in the whole of the area. In other words, I have spent a great deal of time with "boots on the ground" in the villages.

I want to share just a few of my experiences of the effects of energy prices in the towns and villages of rural Alaska.

I would like to begin by saying that although the nation now is experiencing high energy prices; we in rural Alaska have had to deal with this issue for the last 8 years or so.

When the local retailer in our area sold to an Australian conglomerate, our fuel prices rose 40 percent in one day!! I will never forget the year that my wife and I were so excited because our kids would both be in school and we could count on the added money in our pockets because we wouldn't have to deal with childcare. Our joy was short lived because that year the price of fuels rose $1.00 as the barge delivered fuel. The price increase took all of the money we would have saved plus extra.

As the fuel wholesalers have changed hands over the years we have had to deal with price increases that include a more than 340 percent increase in the cost of fuel since 1996. I have attached the cost calculation from the Alaska Cooperative Extension service for the committee members. The point is that though this issue is at the forefront on the national stage, it has been an issue for several years in rural Alaska.

I would like to share an experience that I have never forgotten: In the Y–K Delta, as in many areas of rural Alaska, residents do not have jobs per se. Many subsist off the land as the seasons roll through the year. I was in Tuntutuliak, Alaska, waiting for my ride to the Village Office in which I would be working. As I sat waiting near the local Fuel Sales business, an old man pulled in with an 18 foot skiff loaded with his family. I said Hi and asked where he was going. He said they were headed berry picking. He told the Fuel guy that he needed to fill up, but the pump wasn't working. The Fuel guy told him that it worked, but he would have to pay before he could fill his boat. There was also no more credit available, so he would have to pay cash.

The old many reached into his pocket and pulled out twenty dollar bill. He asked if it would fill his boat. Unfortunately it would only buy a couple of gallons, not enough for the berry picking venture. The man went back to the boat and drove back to his parking spot. Berry picking would not happen today.

That story has never left my memory. That family would have been doing three things that are very important to village life.

1) Conducting and passing on the tradition of subsistence.

2) Providing important foodstuffs that are an important part of the native lifestyle as well as not having to live on processed and imported foods.

3) Conducting an activity. This simple task of having something to do is important to every human. It is this or sitting around. Rural Alaska has a great suicide rate. Doing instead of sitting is very important.

But of all the problems of life in rural Alaska, what would be the solution?

My opinion is that it cannot be in the form of cash payments to residents. Band aid approaches have never worked and will never work. Turning on the money hose and hosing the area down with money will not work. Whatever form of aid is giving has to be well thought out and long term so that the aid will incentivize the aid.

A friend of mine, a river boat captain, and I were hauling fuel to the villages one winter. The village tanks at the time were too small to hold an entire fuel supply because the Government had added more and more housing without a tank farm with enough supply to keep the homes heated for the year. That coupled with funding that was bi-annual, made it so we had to haul fuel in the dead of winter with small trucks. A very inefficient form of transportation, but it was the only alternative. We were taking break one afternoon and we saw a mink scurry around. I asked him why people didn't trap them anymore because they are the most desirable mink in the world. "Too damn easy to go to the Post Office," he said. I asked what he meant and he said that it was too easy to go to the Post Office and get a check rather than do something productive. A hardnosed evaluation maybe, but it has some validity. Whatever aid is produced needs to be evaluated to make sure it has the desired effect.

The best example of this kind of aid actually comes from Germany. In Germany, the Government provided 50 percent instant tax rebates for all alternative energy

installations. They made it a huge incentive for a person or business to reduce their energy use. Germany went from one of the largest consumers of energy in Europe to one of the smallest.

Lastly I want to mention one impact of high energy prices that is probably the most insidious of all of them. High energy prices have begun to start an exodus of sorts from rural Alaska. Anchorage School District has had to hire 18 positions more than they anticipated because of the influx. As more and more people leave rural Alaska, the problems in rural Alaska will be exacerbated.

Due to the large area of Alaska and the lack of residents, we are considered "Rural." But for all intents and purposes, each village is a Micro-Urban environment. Each village, as a unit, depends upon its residents for its survival. Villages as little tribal elements cannot survive if there is a great out flux of people. The impact of this is that the many unique aboriginal traditional elements of the native tribes will be eliminated. This above all may be the worst impact of the high energy costs.

The Yupik/Cupric culture is one of the last in the country that still survives in language and tradition. Yes it is changing, but to see it destroyed would be a true tragedy.

I would like to thank the committee for the opportunity to make these comments. I would especially like to thank Senator Lisa Murkowski for bringing the hearing to rural Alaska. Her insight into our lives has been truly beneficial for Alaska and the Nation at large.

| | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Food - Family of 4 | 144.14 | 149.04 | 152.57 | 159.33 | 166.72 | 186.17 | 190.71 | 186.97 | 195.87 | 203.28 | 208.79 | 229.06 | 309.23 | 2008 Estimated |
| Food Increase | | 3.40% | 5.85% | 10.54% | 15.67% | 29.18% | 32.31% | 29.71% | 35.89% | 41.03% | 44.85% | 58.91% | 114.84% | Total Increase |
| | | 3.40% | 2.37% | 4.43% | 4.64% | 11.67% | 2.44% | -1.96% | 4.76% | 3.78% | 2.71% | 9.71% | 35.00% | Year to Year Increase |
| Electricity - 1000kw | 244.39 | 245.95 | 235.43 | 202.68 | 235.76 | 231.59 | 236.80 | 254.85 | 417.80 | 331.26 | 290.32 | 335.19 | 670.00 | |
| Electricty Increase | | 0.64% | -3.67% | -17.07% | -3.53% | -5.24% | -3.11% | 4.26% | 70.96% | 35.55% | 18.79% | 37.15% | 174.15% | Total Increase |
| | | 0.64% | -4.26% | -13.91% | 16.32% | -1.77% | 2.25% | 7.62% | 63.94% | -20.71% | -12.36% | 15.46% | 99.89% | Year to Year Increase |
| Heating Oil/Gal | 1.46 | 1.35 | 1.30 | 1.67 | 2.24 | 2.26 | 2.26 | 2.48 | 3.85 | 3.96 | 4.48 | 4.53 | 6.77 | |
| Heating Increase | | -7.53% | -10.96% | 14.38% | 53.42% | 54.79% | 54.79% | 69.86% | 163.70% | 171.23% | 206.85% | 210.27% | 363.70% | Total Increase |
| | | -7.53% | -3.70% | 28.46% | 34.13% | 0.89% | 0.00% | 9.73% | 55.24% | 2.86% | 13.13% | 1.12% | 49.45% | Year to Year Increase |
| Gasoline/Gal | 1.76 | 1.70 | 1.59 | 2.09 | 2.84 | 2.82 | 2.70 | 2.86 | 3.70 | 4.15 | 4.38 | 4.59 | 5.85 | |
| Gasoline Increase | | -3.41% | -9.66% | 18.75% | 61.36% | 60.23% | 53.41% | 62.50% | 110.23% | 135.80% | 148.86% | 160.80% | 232.39% | Total Increase |
| | | -3.41% | -6.47% | 31.45% | 35.89% | -0.70% | -4.26% | 5.93% | 29.37% | 12.16% | 5.54% | 4.79% | 27.45% | Year to Year Increase |
| Propane- 100lb | 105.00 | 105.00 | 105.00 | 110.25 | 127.05 | 126.50 | 126.50 | 126.50 | 126.50 | 140.30 | 150.70 | 162.84 | 203.55 | |
| Propane Increase | | 0.00% | 0.00% | 5.00% | 21.00% | 20.48% | 20.48% | 20.48% | 20.48% | 33.62% | 51.14% | 55.09% | 93.86% | Total Increase |
| | | 0.00% | 0.00% | 5.00% | 15.24% | -0.43% | 0.00% | 0.00% | 0.00% | 10.91% | 13.11% | 2.61% | 25.00% | Year to Year Increase |

Sources- AK Cooperative Extension - Food Cost Surveys
2008 Actual Prices

PREPARED STATEMENT OF LORETTA BULLARD, PRESIDENT, KAWERAK, INC.

I strongly encourage the Senate Committee on Indian Affairs to increase funding levels for the Bureau of Indian Affairs Tribal Priority Allocation (TPA) and the Small and Needy Tribe funding.

**JUSTIFICATION**

Kawerak has provided BIA service programs via the Indian Self-Determination and Education Assistance Act, PL 93-638, since 1976. We use BIA TPA funds to provide higher education scholarships, adult vocational training, ABE/GED services, support to the Reindeer Herders Association, village planning, social services to children and families, welfare assistance, realty services related to Native allotments, and other services to the Native people of the Bering Straits region. Rural Native Non-profits and tribes are the backbone of the service delivery system in rural Alaska. Neither the State nor Federal Governments have many positions in Rural Alaska. We fill that gap.

Of the 9,380 residents in the Bering Straits Region, approximately 79% are Alaska Native. 42.3% of the Native population in the region is 19 years of age or younger. 47% of the region's population ages 20 and older do not have a GED or high school diploma. (For older Alaska Natives, this is because until the late 1970's, there were no high schools in the villages. Most village schools only went to the 8th grade.) Increasing numbers of high school students are dropping out because of the high school qualifying exam and are seeking GED services through Kawerak. In the 2004/2005 school year, there were 79 high school graduates, 33 GED graduates and 99 high school drop outs. This year, with our very limited GED funding, we were able to help 41 adults pass their GED exam.

Per the 2000 census, 21% of the Native population in the region lives in poverty (down from 24% in 1990 – so things are getting better!) as compared to 4% of the Non-Native in-region population. According to the 2000 census, 48.24% of the adults in the region between the ages of 18 and 65 are not employed, not because they don't want to be – but because jobs are not available.

Village residents continue to be heavily reliant on subsistence resources to feed their families. Between 1995 and 2004, we had 62 suicides in the region, all Native people, many of them teens and young adults. The Bering Straits Region accounts for 5% of all suicides in the state while our regional population comprises only 1.7% of the state population. This gives you a picture of those we seek to serve with our BIA TPA funding.

The cost of delivering services has increased tremendously. In 1998 the cost of living in Nome was approximately 235% that of Portland, Oregon, and the cost of living in our villages

was, and is, substantially higher than that. Between 1998 and 2008, per the Anchorage Consumer Price Index, Anchorage has experienced a 22.12% increase in the rate of inflation.

Fuel costs – which translates into heating, transportation and electricity costs – have sky-rocketed. As of August, 2008, we are paying $5.65 a gallon for heating oil in Nome and $5.39 a gallon for gasoline, this in an area of the nation where we **have** to heat our homes and businesses 10 months out of the year. Prices for fuel and gasoline in the villages are even higher – see attached price list. Higher fuel prices are having a tremendous impact on the cost to heat homes, generate electricity, transport people and goods, the cost of consumer goods, etc. Because Nome and our villages are not connected to the road system, all goods must be flown or barged in. A roundtrip airline ticket that used to cost $250 between Nome and Gambell, now costs $432.00. We currently pay $1.00 a pound to ship groceries and other items from Anchorage to Nome on top of the cost of the goods – that's with a negotiated agreement whereby we get a price break for high levels of shipping. This does not include the cost to transport goods further by bush plan between Nome and the villages.

We don't foresee fuel prices going down. Once we get the annual fuel barge, the price is locked in for the year. Energy costs will continue to escalate until such time as we can develop alternative forms of energy. Five years ago, we recommended to the Denali Commission that they invest a portion of their infrastructure dollars into developing alternative energy sources for rural Alaska – at that time, fuel costs were probably half of what they are today.

All through this, **funding for BIA-funded programs has not kept up with inflation for the past decade – nor has the funding been increased to account for population growth. In fact, real funding levels have declined.**

In 1998, Congress appropriated $757.3 million dollars in TPA funding. In 2006 – Congress appropriated $765.8 million. For 2007, TPA is down to $754.06 million - which is less than the amount appropriated in 1998. For the President's 2008 budget, he proposed TPA be funded at a range of $694-745 million – again well below 1998 funding levels. It appears that while BIA funding has increased over the past ten years, it has increased in areas that do not provide direct benefit to Alaska Natives and the majority of Native Americans. For example, in 1997, the Office of the Special Trustee (OST) was budgeted at $32.1 million. In 2006, the OST received $191.5 million and is expected to receive $186.1 million in 2008. We know there are issues with trust management, but BIA is basically receiving increases in areas that address the needs of the bureaucracy. They are not seeking funds to meet the basic needs of the constituency they were formed to serve.

Even when Congress has made additional dollars available to initiatives within the BIA Budget, Alaska Natives for the most part have not been able to access the funds to help meet the special challenges that we face. For example, we cannot access education funding (except for JOM), Public Safety & Justice funds, Executive Direction & Admin Services, Facility Construction dollars, or Office of Special Trustee Funds. Nor are we able to raise funds for services through gaming activities. The President's 2008 budget proposed to take funds from within the BIA budget and re-allocate it to combat meth addiction by hiring more tribal police and upgrading tribal detention centers. We are not able to access funds through either one of

these initiatives – since BIA does not fund tribal police in Alaska – and we don't have tribal detention centers in the villages. (We do have **extremely** substandard holding cells in the villages that are owned by the 2nd class cities.) Anecdotally, in talking with a barmaid in Nome, she indicated that we now have meth in Nome. Every indication we have is that if alcohol is bad, meth is 10 times worse and we don't want to see it take a foothold in our villages. We could definitely use resources to help keep it out, but under the President's budget, we are not able to access resources to do so.

When Kawerak contracted and later compacted BIA programs under PL 93-638, we assumed program functions of the federal government and received roughly the same amount of money the BIA had to operate the same programs. But we have simply not kept up. Federal employees in rural Alaska, for example, have long enjoyed a tax free COLA to compensate for the higher cost of living in Alaska. Our employees, who live in more remote and higher cost areas than do most federal employees, receive no such benefits even though they perform work that would be otherwise performed by federal employees if Kawerak had not contracted to provide the services.

We are endeavoring to provide more services to more people with funding that is significantly reduced both in real dollars – as well as due to the impact of inflation. BIA TPA dollars are continuing funds that can be directed to areas of high need, unlike competitive grant dollars, that come and go. BIA TPA dollars constitute core funding around which other services revolve and we encourage Congress to fund this line item in the BIA budget adequately such that it keeps current with inflation, population growth and the cost of providing services.

The problem of having TPA funding effectively frozen is common to tribal PL 93-638 contractors nationally, but it is exacerbated in rural Alaska by the extremely high cost of doing business. **Kawerak, Inc. encourages Congress and the Administration to:**

- **Increase the Tribal Priority Allocation funding (TPA) within the Bureau of Indian Affairs budget to bring it and keep it current with the rate of inflation and population growth; and**
- **To increase the Small and Needy tribe allocation for Alaska Tribes to $200,000 as recommended in the 1994 BIA Budget Task Force Report.**

**Heating Fuel & Gasoline Prices in the Bering Strait Region**

| Community | May08 Fuel Oil *Cost per gallon* | May08 Gasoline *cost per gallon* | Aug08 Fuel Oil *cost per gallon* | Aug08 Gasoline *cost per gallon* |
|---|---|---|---|---|
| Brevig Mission | $4.45 | $5.10 | $6.90 | $6.45 |
| Diomede | $5.50 | $4.95 | $7.00 | $4.99 |
| Elim | $5.00 | $4.89 | $8.09 | $7.25 |
| Gambell | | | $7.65 | $7.05 |
| Golovin | $4.00 | $4.25 | $8.23 | $7.70 |
| Koyuk | $3.98 | $3.98 | $7.90 | $7.56 |
| St. Michael | $4.65 | $4.98 | $7.75 | $7.50 |
| Savoonga | | | $7.65 | $7.05 |
| Shaktoolik | | | $7.13 | $5.95 |
| Shishmaref | $5.09 | $5.25 | | |
| Stebbins | | | $7.49 | $7.75 |
| Teller | $3.91 | $4.38 | $6.78 | $6.64 |
| Unalakleet | $4.58 | $4.65 | $6.89 | $6.89 |
| Wales | $4.84 | $4.94 | $7.00 | $6.85 |
| White Mountain | | | $6.25 | $5.99 |
| Average Village Fuel Costs | $4.51 | $4.71 | $7.33 | $6.83 |
| Nome | $3.90 | $4.30 | $5.65 | $5.39 |
| Anchorage | $4.42** | #3.93* | | |
| Average Lower 48 States | $3.76** | $3.94** | | |

*AAA 5/20/08
**http://www.eia.doe.gov/steo 5/20/08
***Inlet Petroleum delivered 300 gallons 5/20/08

# AVCP Calista Region

# Biennial Energy Plan 2008-2010



**Nuvista Light and Electric Cooperative, Inc.**
A regional wholesale cooperative participated by
Calista Corporation/AVCP/AVCPRHA/YKHC/AVEC/Chaninik Wind Group/MKEC/Kwethluk Power/Lower Yukon Delta

# *Biennial Energy Plan 2008-2010*



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# *Introduction*

This Energy Plan continues the work and progress of the AVCP Calista regional leadership, to adopt a long term energy policy and development plan to address the long standing energy sustainability issues that face the region. The regional economy, its social and community well being is highly susceptible to changes in energy costs. And it is the goal of the stakeholders participating in this effort to engage their collective and combined resources to achieve a sustainable energy plan. This plan is envisioned as a biennial process to identify both conventional and non-conventional renewable energy development and deployment efforts help to reduce the costs of energy. This plan also proposes to identify strategies to assist in capital finance and deployment of these efforts. Action and activity plans are to be proposed for each strategy identified in this process for both public and private involvement in this biennial energy planning process.

AVCP Calista Regional Energy Leadership consists of the active participation of the executive officers, board members, staff of the major regional organizations, local governments, utilities and the business community. These members came together under the auspices of the Nuvista Light and Electric Cooperative, Inc. a regional wholesale utility formed originally by Calista Corporation and currently administered by the Association of Village Council Presidents. Shortly after Placer Dome began exploration in the mid-1990's Calista Corporation worked with other regional organizations and helped establish Nuvista Light and Electric Cooperative in order to conduct energy feasibility studies for the region and the development project at Donlin Creek. An energy study was completed by Nuvista in 2002 and a feasibility study in 2004. Nuvista is now fully engaged in this energy planning and development process for the AVCP Calista region.

**Nuvista Board of Directors and Energy Planning Participants**

Sven Paukan, Nuvista Chairman, AVCP Board, Andreafski Tribe

Paul George Guy, Nuvista Vice-Chairman, Calista Board, Kwethluk Power Company and Kwethluk Inc.

Arthur S. Heckman Sr., Nuvista Secretary, Calista Board, Pilot Station Village Corporation

Daniel Waska, Nuvista Treasurer, AVCP Board, Atmautluak Tribe

Moses Owen, Nuvista Board, AVCP Board, Akiak Tribe

Willie Kasayulie, Nuvista Board, Calista Board

Myron Naneng, AVCP President

Ron Hoffman, AVCP Regional Housing Authority CEO

Robert Nick, AVCP Regional Housing Authority Board Chairman

Martin B. Moore, City of Emmonak

William Igkurak, Chaninik Wind Group Chairman

Matthew Nicolai, Calista Corp., President & CEO

Andrew Guy, Calista Corp., General Counsel

Doug Nicholson, Donlin Creek, LLC, General Manager

Brent Petrie, Alaska Village Electric Cooperative, VP

Ernie Baumgartner, Middle Kuskokwim Electric Cooperative, CEO

Gene Peltola, Yukon Kuskokwim Health Corporation, CEO

# *AVCP Calista Region's Energy Agenda*



## *Vision*

The AVCP Calista Region will attain affordable, long term energy sustainability and self-sufficiency.

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## *Mission*

**The mission of the AVCP Calista Regional Leadership in this energy plan is to ensure that the people of the AVCP Calista region have an adequate supply of reliable and affordable energy and is secure from outside economic influences, by helping tribal and community members save energy, develop clean energy resources, promote renewable energy and economic development.**

# *Values*

## The Core Values as expressed by the AVCP Calista Regional Leadership include the following statements:

*Integrity and Ethical Standards*
To uphold the integrity of each participating organization, corporation and tribe while maintaining the highest ethical standards and professional performance

*Respect*
To hold in high esteem the diversity and value of all individuals, corporations, tribes and organizations

*Communication*
To maintain open, consistent communications

*Excellence*
Pursue continuous improvement, development and learning

*Local Cultural Knowledge and Resources*
To appreciate and enhance the cultures, traditions of the AVCP Calista Region and the human, technical and organizational resources of each organization, corporation and tribe

*Collaboration*
Working in partnership with each organization, corporation and tribes in the AVCP Calista Region to achieve long term energy security and sustainability

*Environmental Stewardship*
Maintain the respect for and future sustainability of the land and resources of the AVCP Calista Region.



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# I. Policy

**The AVCP Calista Region promotes the development and implementation of public/private support strategies that effectively reduce the cost of energy for utilities and consumers in the region.**

**The AVCP Calista Region promotes the development of local community energy conservation and efficiency policies and plans that brings together local residents, schools, local governments, businesses and organizations.**

**The AVCP Calista Region supports all of its utilities and their need for efficient operations, maintenance, upgrades and new development.**

**The AVCP Calista Region promotes the utilization of energy efficiency technologies, conservation and weatherization programs for commercial and public facilities, and private homes as a way to maximize the effectiveness of energy resources.**

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The State of Alaska is encouraged to expand its weatherization and energy efficiency programs to include community facilities and buildings to enable weatherization improvements and deployment of energy cost savings technologies.

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**The AVCP Calista Region will engage its combined efforts in renewable energy resource assessment, development and deployment that assist in achieving energy self-sufficiency.**

The State of Alaska is encouraged to provide a renewable resource deployment assessment of the region based upon a MM/BTU cost. This would assist in development and deployment of renewable energy projects based upon available renewable resources in the region.

**The AVCP Calista Region will develop multiple, sub-regional proposals for the region which will identify specific renewable energy projects based upon appropriate resources available in each sub-region.**

The AVCP Calista Region promotes the planning and development of regional wind energy projects along the eastern Bering Sea coast, the lower Kuskokwim coast, the Bethel area; and potential build-out from these areas to other nearby communities.

The AVCP Calista Region promotes the development and deployment of Biomass projects in the Middle Kuskokwim and Lower Yukon regions to provide community facility heating needs with biomass boilers, and wood chippers that would provide feed stock for these and a variety of community facility and home heating wood boilers.

Participants in this energy plan promote investigation of the application of In-Stream Turbines in the Kuskokwim and Yukon Rivers to determine whether or not in-stream turbines will work in different communities in the region. The state is encouraged to develop financing to help organizations buy these devices. The community can then apply for funding to purchase the in-stream turbine once they have established feasibility.

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Comment [j1]: If the organizations have already purchased these devices prior to being proven feasible, why would the community need to purchase them again after feasibility?

The AVCP Calista Regional Energy Leadership desires that the state determine ocean wave energy development potential, and electrical equipment and transmission requirements for communities along the eastern Bering Sea coast.

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The AVCP Calista Regional Energy Leadership seeks the state to help determine geothermal potential at Ophir Creek near the NYAC mine, including in-river hydroelectric potential for the nearby communities.

Comment [j2]: The state generally does not look at energy potential on private lands (the hot springs on Ophir Creek have been selected by Calista). They have evaluated Chinlinlik and Tatawiksuk Hot Springs, both on state land and both remote from communities.

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**The AVCP Calista Region promotes the exploration and development of oil and gas resources that may exist in the region for local market utilization.**

Tribes for the first time have recently rescinded their long standing resolution banning oil and gas exploration. There are two potential targets identified in the AVCP region permissive for hydrocarbon exploration.

Comment [j3]: There are no hot springs at the Nyac Mine. There is a hot spring 15 miles north of Nyac on the Ophir Creek tributary of Whitefish Lake, which is currently utilized by the Faulkner family. There are no nearby communities around this hot spring.

Comment [j4]: This is not a geothermal resource

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**The participants in this AVCP Calista Region Energy Plan respects the rights and privileges of each land owner /stakeholder directly involved in the utilization and development of renewable resource energy on their property**

and will cooperate with affected land owners and stakeholders concerning land owner/stakeholder policies and procedures for utilization and development of renewable resource energy projects on their property.

**Key industries in the region that provide jobs and income, and enable energy sustainability are to be promoted and assisted in achieving energy security.**

**The AVCP Calista Region will achieve fuel economy and savings by engaging in engaging in collective and cooperative purchasing, bulk fuel storage and transportation.**

**AVCP, Calista and all interested participants in this planning process promote the marketing and investment of industry into the region that supports its goals for renewable energy sustainability.**

Comment [j5]: What is being marketed and by whom? Is industry the potential client or are they the marketer?

**The AVCP Calista Region promotes the planning and development of regional and sub-regional community inter-ties; and supports the consideration of an inter-tie to the railbelt based upon the economic development potential for projects such as the Donlin Creek Gold Mine Development Project.**

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**The AVCP Calista Region promotes the development of a regional energy coalition that includes all the utilities, major electrical consumers and fuel operators in the region, that can consider regional electrical utility and fuel agreements, in order to achieve energy cost savings and efficiencies.**

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**The AVCP Calista Region promotes the education of its members in energy conservation, energy efficiency, renewable energy development and deployment. This education programming must be made available for both schools and the general public through curriculum development, educational materials, annual energy conferences, workshops and summits.**

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**The AVCP Calista Region promotes the continuation of the State of Alaska Power Cost Equalization Program with improvement of its qualifying requirements for utilities, and to include schools and other government facilities affected by the current energy crisis and special provisions for renewable energy deployment.**

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Comment [j6]: How will this covered by PCE?

**The AVCP Calista Region promotes the establishment of a dedicated State of Alaska Department of Energy cabinet office and representation in the region for direct support, training and technical assistance.**

**The AVCP Calista Region supports the establishment of a dedicated renewable energy deployment and energy efficiency equipment loan and grant fund made available in the region that is coordinated jointly with local banking and financing institutions.**

**The AVCP Calista Region supports the planning, development and utilization of North Slope gas for the region and other rural Alaska communities, whereby gas from the proposed gas pipeline can be delivered to communities in the region.**

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**The AVCP Calista Region promotes legislation that will create an Alaska Fuel Subsidy that will take Alaska Royalty Oil and have it refined in western Alaska in order to help reduce fuel shipment distances to villages, and have heating fuel, gasoline, diesel, aviation fuel, and propane delivered to all of communities in Alaska.**

Comment [37]: This would be an enormous amount of crude oil with serious environmental risks to transport, chemically refine and store.

Comment [38]: These refineries are not physically in western Alaska and should not be included here.

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**The AVCP Calista Region supports the existing USPS bypass mail system as amended in the Rural Services Improvement Act passed in 2006. The region does not support the current U.S. Postal Service proposal to add 14 villages as hub communities for mainline bypass which would be subsidized at lower rates.**

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## II. Energy Crisis

People throughout the AVCP Calista region are facing an energy crisis of monumental proportions. Fuel prices are high and electric rates keep increasing due to high diesel costs. It has been noted that fuel in some villages is over $10.00 a gallon in many villages of the region during summer of 2008. Some local utilities are faced with a decision to shut down later this winter due to these high prices in order to conserve fuel. Families are forced to make decisions about choosing to stay warm, hunting for food or paying their bills. Delinquency rates in some of the region's AVCP/RHA/HUD housing projects are at an all time high. Fuel and store credit accounts in many of village stores are also up due to the energy crisis. Recently, the AVCP Executive Board adopted a resolution declaring an energy crisis and demanding the state take steps to reduce fuel prices for utilities and consumers. This resolution followed a similar resolution submitted by the Alaska Village Electric Cooperative which proposed the state take measures to help keep the delivered cost of fuel for utilities at $10.00 per MM/BTU and a cap for other fuels at $12.50 per MM/BTU. Additional efforts are being pursued by the Alaska Federation of Natives to seek family and individual fuel subsidies as well as adopt other energy cost reduction efforts.



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## *III. Goals and Deployment Objectives*

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### Bulk Fuel

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Establish regional bulk fuel cooperative by bringing together utilities, school districts, village corporations, CDQ groups, and other fuel buyers within the region to enable consolidated and coordinated bulk fuel purchases to reduce the price of fuel.

Establish annual bulk fuel summit for all major fuel buyers and users to enable regional collaboration and coordination of bulk fuel purchases.

Pursue the development of a fuel cost program modeled after the Power Cost Equalization program to establish standard rates for fuel.

Pursue funding for community bulk fuel tank farm storage upgrades, in particular the Denali Commission village bulk fuel tank projects for the region.

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### Western Alaska Refinery

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Pursue the development and establishment of a Western Alaska Fuel Refinery to reduce the cost of fuel delivery throughout western Alaska; include the development of bulk fuel storage and delivery for western Alaska and other bulk fuel customers in the Pacific Rim, including the Department of Defense.

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### Renewable Energy

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Expand Wind Energy Projects along the eastern Bering Sea Coast and the Bethel area.

Develop and install Biomass projects in communities along the Yukon and Kuskokwim rivers; including wood fired

boilers, heaters and wood chippers for community facilities and buildings.

Install Run of River Small Hydro Projects in communities where the use of this technology is feasible and appropriate.

Pursue continued funding and support for the Denali Commission alternative energy projects.

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## Regional Utilities

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Pursue the development of a wholesale non-profit utility for Bethel and surrounding villages to consider both a consolidated power delivery system and renewable energy deployment.

Pursue the development of sub-regional interties and distribution systems beginning with the development of an intertie to connect St. Mary's, Mountain Village and Pilot Station.

## Energy Assistance and Weatherization

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Expand energy assistance programs and improvement of weatherization programs by non-profits, tribes and local organizations.

## Renewable Energy Development Fund

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Pursue the development and establishment of a regional renewable energy development fund via public and private financing and development of a regional energy authority.

## Natural Gas Exploration and LPG

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Pursue the exploration of natural gas in the Lower Yukon Delta and development of an LPG project in the lower Yukon delta region for the development of natural gas and LPG.

## Power Cost Equalization

Pursue full funding of PCE, expansion of the program to improve qualification and participation by non-profit organizations and community facilities.

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## Regional Energy Training and Community Development

Pursue the development of a regional energy training and education center and program for communities and organizations.

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## *IV. Legislative Issues*

*(tbd - outline above goals for legislative agenda)*

**Bulk Fuel**

**Western Alaska Refinery**

**Renewable Energy**

**Regional Utilities**

**Energy Assistance and Weatherization**

**Renewable Energy Development Fund**

**Natural Gas Exploration and LPG**

**Power Cost Equalization**

**Regional Energy Training and Community Development**

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Page 11: [2] Comment [j9] jmcatee 6/26/2008 11:55:00 AM
This is not a retail price cap; no one buys retail in BTUs.

Page 11: [3] Comment [j10] jmcatee 6/26/2008 11:55:00 AM
How will this be transported?

Page 11: [4] Comment [j11] jmcatee 6/26/2008 11:55:00 AM
The regional electrical power system is no longer part of the project.

Page 11: [5] Comment [j12] jmcatee 6/26/2008 11:55:00 AM
The Ophir Creek Hot Springs is not part of the Nyac Mine or located on the Tuluksak River.

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The Alaska Legislature is to be called for a special session in the summer of 2008. The Alaska Energy Authority is due to develop a state wide energy plan by the end of 2008. This biennial plan hopes to identify legislative recommendations for the special session and the upcoming 2009 session and provide additional recommendations for federal support.

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## III. Submitted Policy Statements

The AVCP Calista regional leadership adopted and submits the following policy statements to the state for consideration in summer 2008:

### Immediate needs

The AVCP Calista Regional Energy Leadership respectfully requests the Governor to call the Alaska Legislature to an Immediate Energy Special Session in Summer 2008 to address the following:

Declare an economic energy disaster for all villages across the state of Alaska and include this issue in the upcoming special session.

Give Mr. Steve Haagenson, Director, Alaska Energy Authority, cabinet level status and convert the AEA to the Alaska Department of Energy. The Director shall coordinate efforts and centralize state and federal resources to solve the long term energy crisis.

State of Alaska

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should take proactive steps to reduce the delivered cost of fuel to **all village and locally owned utilities** to a reasonable level of

$10.00 per million BTU. Include conservation requirements and measures in this program.

The State of Alaska should develop a relief program for its citizens such that the retail cost of petroleum, propane and natural gas be capped at $12.50 per million BTU[j1]

Craft legislation that will reimburse all communities that waive all sales taxes on electricity and fuel, and increase the role of the private sector by providing tax credits for those operators that reduce the cost of delivering fuel.

Power Cost Equalization should be fully funded until it is no longer needed. Add additional resources to the power cost equalization endowment and expand eligibility for qualifying for PCE. Include renewable energy deployment in the PCE program.

Alaska Congressional delegation

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should submit legislation to adopt a moratorium on all fuel taxes.

**Regional Energy Development**

The AVCP Calista region needs to determine its best and most sustainable energy deployment options that work both on a regional and local community level. It should consider to what extent it could be connected to the rest of the states low cost energy infrastructure via transmission lines from the railbelt, current feasibility of installing long term sustainable regional energy facilities within the region; feasibility of installing sub-regional grids connecting nearby communities in order to reduce fuel costs; and the deployment of regional and local community renewable energy facilities that effectively reduce the overall cost of energy. Conventional measures in this process also have to involve efficiency and conservation strategies for both operators and consumers.

This plan should also incorporate a process for identifying what drives energy sustainability for the long term in each area of the region. This would involve identifying the industries in the region that act as key economic motors, and identify how each stakeholder business, organization or local government behaves and participates in the regions economy. This factors in where stakeholders are able to identify what activities businesses, organizations and local

governments are able to enage specifically in the economy in order to assist in generating income and revenues, creation of jobs and related ventures that promote energy sustainability. This is equally as important as planning and deploying energy projects in that it helps to guarantee a working business model and plan of finance for the long term in each area of the region.

Renewable wind energy development needs to be seriously considered as a low cost energy resource. Its potential to provide regional energy is an important long term state policy issue that needs to be determined. Biomass energy development along the middle Kuskokwim and Yukon needs to be made available as a viable and feasible alternative at the community level. There also has to be consideration for the region in the planning, development and utilization of North Slope gas

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, whereby gas can be taken from the pipeline[j2] and delivered to communities in the region. Natural gas resources in the region need to be promoted for exploration and development for local markets.

The Donlin Creek Gold Mine Development Project needs to be included in the development of a regional energy strategy. Currently the price of gold is at an all time high, but so is the price of fuel, as demonstrated by the current energy crisis. The Donlin Creek project would become feasible under a public/private development effort with the goal towards low cost energy and regional economic development. Including the Donlin Creek Gold Mine Development Project in a long term regional energy plan is a logical and sensible strategy for finding long term low cost energy solutions for the region.

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Justification of state support

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for this project can be demonstrated by the displacement of energy and welfare costs over the life of the project. As stated above, mining can be a key economic motor to energy sustainability throughout the region due to the employment and development practices currently demonstrated by the Donlin Creek LLC and its partners. During this exploration stage of the project,

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more than 95% of the workforce is local hire on the Donlin Creek

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project, where over 250 jobs are

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held during summer operations

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by people from throught the region. This practice has had a definite positive impact on the local and regional economy.

The Kuskokwim region in southwestern Alaska is documented as having some of the highest unemployment rates, dependence on welfare transfers and general lack of economic development in the nation. Donlin Creek presents the best opportunity for sustainable long-term economic development to transform the region and revitalize the economy.

When the Donlin Creek Mine has advanced through the feasibility and permitting stage and construction begins, this project is expected to be the single largest employer and direct contributor to the cash economy in the Kuskokwim region. In addition, indirect benefits will include lower shipping, fuel and energy costs, increased local business opportunities, and increased road and marine facility maintenance.

Approximately 600 to 700 jobs would be created during construction and 400 to 500 during annual operations of the Donlin Creek project and regional electrical power system[j3]. Direct jobs at the mine and power system could reduce the regional unemployment rate of 20% (1,800 persons in the summer of 2003) by about one-third. Capital costs

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are likely to exceed $2.0 billion for both the mine and power projects. These projects would generate annual, local expenditures of more than $80,000,000, with annual salaries accounting for approximately $30,000,000 of this amount. During construction and throughout the expected 20-year-mine life, $2.5 billion dollars would likely be expended directly into the regional economy. This would be a much larger economic driver than the $665 million over twenty years in federal and state transfer payments for welfare in the region, assuming current levels of welfare and unemployment payments.

With unemployment reduced by one-third, it can be anticipated that the region's current welfare and unemployment payments of $33 million per year would also be reduced by about one-third. The net present value of these savings to the state and federal governments from 2010 to 2029 exceeds $150 million. This presents a major displacement of welfare

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payments by jobs and income generated by development

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initiated by the Donlin Creek

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Project. Generally, mining economic analysis is calculated over a 15 to 20 year mine life. However there is the very real potential of additional exploration in the immediate vicinity of the project, which may

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produce additional developable reserves. Donlin Creek is

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a part of the Titina Gold Belt that extends eastward through the Alaska Mountain Range and

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into Canada. There are active exploration projects in nearby mining districts. With a fully developed mine site and mill with power plant and related infrastructure, these off-site exploration projects become more feasible to develop

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. It is conceivable that the facilities at Donlin Creek will be fully utilized for many years into the future. In other areas of the country, Nevada for instance, it is not uncommon for mines to have

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mine lifespans of more than 50 years.

Donlin Creek will spur

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development of transportation infrastructure that will improve conditions for surrounding communities and businesses. In the immediate vicinity of the mine, a docking facility and a road from a port on the Kuskokwim to Donlin Creek will be needed to support the construction and ongoing mine operations. At the same time, costs for transportation of goods and materials will be significantly reduced. Due to economies of scale, sea-river-land transportation costs will drop. Diesel, heating oil and gasoline transport will become more economical, and passenger and cargo air transport will also be positively affected.

## IV. Regional Energy Exploration

### Gas and Oil

For many years the AVCP tribes have been opposed to oil and gas exploration in the region, particularly offshore drilling due to the potential impact to subsistence resources. However, recently the AVCP tribes at their October 2007 convention passed a resolution rescinding earlier resolutions opposing oil and gas exploration and development. The argument expressed by many people in the region was due to the high costs of living, the lack of jobs and the social and community impacts due to the economic conditions facing the region. The people feel that promoting oil and gas exploration and development might provide jobs and income as well other opportunities not now available. The people

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are hopeful that natural gas reserves can be discovered through exploration in the region. In the 1980's AMOCO was slated to drill in the lower Yukon area at a potential site for oil and gas, however due to the opposition at the time by the local tribes and the regional organizations, this plan was never carried out. AVCP hopes now to promote exploration and development in the hopes that such activities will identify gas reserves in the region. This may include becoming involved in ventures related to exploration. Assistance from the state is requested to promote the exploration and development of natural gas resources in the lower Yukon.

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# *AVCP Calista Region's Energy Supply and Demand*

## Overview

### Conservation

Energy conservation is to be the foundation of the AVCP Calista Regional Energy policy. Through this biennial process the participants will provide information to their constituents, demonstrate new energy-saving technologies and offer a variety of programs encouraging people to conserve energy. Local community policy

guidelines will be developed and provided as models for interested stakeholders desiring to take control over their energy sustainability. This can begin with the active participants from local governments and utilities participating in this biennial energy planing process. Conservation and energy efficiency programs have been demonstrated to save on fuel, electricity, natural gas, oil, wood, and diesel. By simply changing light bulbs from incandescent to compact flourescent lights in homes, people use only 20% of the electricity. Other practices at the public and commercial level equally share large savings in the annual energy bill. The larger portion of energy utilization in the region is not for electricity or for vehicles but for home heating. Converting to renewable energy resource for heat is a major consideration in achieving energy independence, sustainability and conservation. It is the goal of the AVCP Calista Regional Leadership to identify practices and methods with each energy goal and objective that incorporates energy conservation as part of deployment.

## Renewable Energy

Wind, biomass (wood and organic solid waste), small in-river hydroelectricity projects, geothermal, wave energy, and to some degree solar energy along with alternative fuels can provide the AVCP Calista region with energy sustainability, independence and rural community development. There are tax credits and low-interest loans for renewable resource projects that provide an incentive for investment in renewable resource energy. If proven feasible, large wind, geothermal and biomass facilities can also qualify for federal production incentives. The Alaska Energy Authority currently manages or funds projects with state and federal funding in the areas of hydroelectric, wind, biomass, transmission and distribution, geothermal, diesel generation efficiency, and energy conservation. These are projects designed to lower the cost of power and heat. This Energy Cost Reduction program, funded chiefly by the Denali Commission, provides grant and loan financing for project proposals program is available through a competitive request for proposals (RFP).

# Fuel Price and Use

Prices for residential heating oil, regular gasoline increased over 100% since 2007 in many of the regions villages (prices without taxes). The AVCP Calista region's prices have followed national trends and will continue to be linked to world oil prices. As stated above,

delivered prices this spring 2008 rose to over $7.00 gallon for home heating fuel in the region.

The news media recently reported the fuel bill for the Alaska Village Electric Cooperative, which serves 53 small villages in the west of the state, went up to $26 million from $14 million last year.

Village residents are already paying electric bills of $300 a month and will look to rates increasing to an unaffordable one-third to one-half from fuel increases. With average household incomes of only $17,500 many families are unable to maintain their livelihood and support their families. Choices are being made for food, fuel and bills at the utility and village stores. Some locally owned utilities are looking towards a bleak winter for 2008-2009 and possible power shut-downs throughout the winter in order to conserve fuel and save on costs.

## Fuel costs by village (Tundra Drums Newspaper 1/3/08)

*The price of gasoline and heating oil in the Yukon-Kuskokwim Delta is sometimes twice that of prices in Anchorage and Fairbanks. Villages are ranked by the cost of heating oil, from highest to lowest.*

| Village | Vendor | Gasoline | Heating oil |
|---|---|---|---|
| Pilot Station | Pilot Station Inc. Native Store | $6.08 | $5.98 |
| Crooked Creek | Thomas Trading Post | $5.95 | $5.85 |
| Akiachak | Akiachak Fuel Sales Inc. | $5.55 | $5.44 |
| Kasigluk | Kasigluk Inc. | $5.45 | $5.40 |
| Nunapitchuk | Nunapitchuk Ltd. general store | $5.40 | $5.35 |
| Toksook Bay | Nunakaviak Yup'ik Corp. | $5.89 | $5.24 |
| Chevak | Chevak Co. Store | $5.35 | $5.15 |
| Chuathbaluk | City of Chuathbaluk | $5.10 | $5.15 |
| Eek | Iqfijouaq Co. Inc. | $5.11 | $5.15 |
| Napaskiak | Napaskiak Tribal Council | $5.08 | $5.15 |
| Tuntutuliak | Qinarmiut Corp. Store | $5.00 | $5.15 |
| Kotlik | Kotlik Yup'ik Enterprises | $5.95 | $5.11 |
| Hooper Bay | Crowley Maritime Corp. | $5.32 | $5.05 |
| Alakanuk | Alakanuk Native Store | $5.83 | $5.04 |
| Upper Kalskag | City of Upper Kalskag | $5.15 | $5.00 |
| Kwethluk | Kwethluk Sports Store | $5.16 | $4.96 |
| McGrath | Crowley Maritime Corp. | $5.73 | $4.92 |
| Newtok | Newtok Traditional Council | $4.99 | $4.90 |
| Gambell | Gambell Native Store | $6.02 | $4.89 |
| Marshall | Marshall Enterprises | $4.83 | $4.88 |
| Quinhagak | Qanirtuuq Inc. | $5.40 | $4.87 |
| St. Marys | Crowley Maritime Corp. | $4.85 | $4.86 |
| Emmonak | Emmonak Corp. | $5.91 | $4.85 |
| Kwigillingok | Kwik Inc. | $5.35 | $4.85 |
| Savoonga | Savoonga Native Store | $5.76 | $4.83 |
| Mekoryuk | NIMA Store | $5.42 | $4.82 |
| Atmautluak | Atmautluak Ltd. Store | $4.93 | $4.81 |
| Mountain Village | Azachorok Fuel Co. | $5.01 | $4.81 |
| Russian Mission | Russian Mission Native Corp. | $5.52 | $4.75 |
| Akiak | Stephan Ivan and Sons Store | $5.00 | $4.60 |
| Kipnuk | Kugkaktlik Ltd. | $5.51 | $4.60 |

| | | | |
|---|---|---|---|
| Tununak | Tununrmiut Rinit Corp. | $4.75 | $4.56 |
| Bethel | Northstar Gas | $4.84 | $4.55 |
| Holy Cross | Holy Cross Oil Co. | $5.30 | $4.55 |
| Grayling | HYL Fuel | $5.50 | $4.50 |
| Kongiganak | Qemirtalek Store | $4.48 | $4.45 |
| Chefornak | Chefarnmute Inc. Yupiak Store | $5.46 | $4.44 |
| Tuluksak | Tuluksak Native Store | $4.93 | $4.32 |
| Aniak | Crowley Maritime Corp. | $4.62 | $4.28 |
| Goodnews Bay | Mumtram Pikkai Inc. | $5.25 | $4.12 |
| Togiak | Togiak Fuel Distributors LLC | $4.21 | $3.68 |

*For comparison:*
Anchorage Various $3.06 $3.20
Fairbanks Various $3.07 $3.18

SOURCE: Telephone survey by The Tundra Drums

As of June 25, 2008 current gas prices in villages of the lower Kuskokwim is averaging $5.35 gal and heating fuel is averaging $4.45. In the upper Kuskokwim prices are higher and have reached upwards of $6.30 gal for gas and $6.60 for heating fuel. On the lower Yukon prices of gas is $5.91 gal and $4.85 for heating fuel; and $6.41 gal for gas and $7.15 gal for heating fuel in middle Yukon villages.

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# Electricity

| Utility | Community | Pop 06/30/07 | Total Fuel Used (gallons) | Total Cost of Fuel/Gallon | Avg Price of Fuel/Gallon | Total Diesel Generated kWhs |
|---|---|---|---|---|---|---|
| Akiachak Native Community Electric Co. | Akiachak | 644 | 181,453 | $ 596,325.38 | $ 3.29 | 1,800,172 |
| Akiak, City of | Akiak | 378 | 90,305 | $ 272,651.20 | $ 3.02 | |
| AVEC | Alakanuk | 678 | 132,087 | $ 248,342.41 | $ 1.88 | 1,757,214 |
| AVEC | Chevak | 916 | 180,785 | $ 345,846.13 | $ 1.91 | 2,287,638 |
| AVEC | Eek | 291 | 56,570 | $ 108,336.85 | $ 1.92 | 775,087 |
| AVEC | Emmonak | 740 | 202,893 | $ 385,988.38 | $ 1.90 | 2,884,529 |
| AVEC | Goodnews Bay | 238 | 54,725 | $ 105,155.68 | $ 1.92 | 686,347 |
| AVEC | Hooper Bay | 1,133 | 207,586 | $ 389,582.77 | $ 1.88 | 922,360 |

| | | | | | | |
|---|---|---|---|---|---|---|
| AVEC | Kasigluk | 534 | 162,151 | $ 310,947.73 | $ 1.92 | 2,235,444 |
| AVEC | Lower Kalskag | 252 | - | $ - | *** | |
| AVEC | Marshall | 370 | 86,539 | $ 164,360.37 | $ 1.90 | 1,203,402 |
| AVEC | Mekoryuk | 192 | 68,559 | $ 128,585.15 | $ 1.88 | 962,073 |
| AVEC | Mountain Village | 786 | 176,569 | $ 330,378.50 | $ 1.87 | 2,615,914 |
| AVEC | Nightmute | 234 | 45,085 | $ 84,482.52 | $ 1.87 | 588,666 |
| AVEC | Nunapitchuk | 516 | - | $ - | *** | |
| AVEC | Pilot Station | 565 | 128,455 | $ 241,443.70 | $ 1.88 | 1,701,354 |
| AVEC | Pitkas Point | 103 | - | $ - | *** | |
| AVEC | Quinhagak | 642 | 134,072 | $ 259,790.18 | $ 1.94 | 1,802,038 |
| AVEC | Russian Mission | 329 | 59,709 | $ 111,665.65 | $ 1.87 | 815,679 |
| AVEC | Scammon Bay | 509 | 121,579 | $ 296,144.96 | $ 2.44 | 1,635,960 |
| AVEC | St. Mary's, Andreafsky | 715 | 215,077 | $ 408,856.64 | $ 1.90 | 3,196,819 |
| AVEC | Toksook Bay | 596 | 139,588 | $ 267,737.43 | $ 1.92 | 2,552,597 |
| AVEC | Tunanak | 328 | - | $ - | *** | |
| AVEC | Upper Kalsag | 276 | 91,301 | $ 172,331.09 | $ 1.89 | 1,255,023 |
| Aniak Light & Power Company | Aniak | 528 | 195,889 | $ 540,199.25 | $ 2.76 | 2,569,600 |
| Atmautluak Joint Utilities | Atmautluak | 304 | 53,931 | $ 173,703.84 | $ 3.22 | 33,265 |
| Bethel Utilities Corp. | Bethel/Oscarville | 6,019 | 3,084,531 | $ 11,632,705.15 | $ 3.77 | 42,140,800 |
| Kipnuk Light Plant | Kipnuk | 688 | 142,565 | $ 451,036.54 | $ 3.16 | 1,427,939 |
| Kotlik Electric Services | Kotlik | 609 | 151,270 | $ 486,744.88 | $ 3.22 | 1,763,129 |
| Kwethluk, | Kwethluk | | | $ | $ 2.85 | |

| | | | | | | |
|---|---|---|---|---|---|---|
| Inc. | | 695 | 100,363 | 285,573.91 | | 1,438,119 |
| Kwig Power Company | Kwigilligok | 361 | 70,347 | $ 189,187.38 | $ 2.69 | 1,065,250 |
| Lime Village Electric Utility | Lime Village | 28 | 9,721 | $ 51,666.35 | $ 5.31 | 101,016 |
| MKEC | Chuathbaluk | 93 | 25,565 | $ 81,655.43 | $ 3.19 | 258,721 |
| MKEC | Crooked Creek | 145 | 23,876 | $ 76,182.40 | $ 3.19 | 274,824 |
| MKEC | Red Devil | 36 | 15,424 | $ 49,270.05 | $ 3.19 | 151,124 |
| MKEC | Sleetmute | 92 | 27,655 | $ 87,272.92 | $ 3.16 | 286,835 |
| MKEC | Stony River (11) | 42 | 15,078 | $ 47,499.46 | $ 3.15 | 143,427 |
| Napakiak Ircinraq Power Company | | 373 | - | $ - | *** | |
| Napaskiak Electric Utility | | 428 | 74,098 | $ 235,252.27 | $ 3.17 | 934,527 |
| Naterkaq Light Plant | Chefornak | 457 | 73,122 | $ 264,217.17 | $ 3.61 | 904,180 |
| Nunam Iqua Electric Company | | 158 | 51,717 | $ 154,223.89 | $ 2.98 | 699,396 |
| Platinum, City of | | 38 | 20,570 | $ 76,508.11 | $ 3.72 | 199,072 |
| Puvurnaq Power Company | Kongiganak | 427 | 77,820 | $ 229,133.10 | $ 2.94 | 951,274 |
| Tuluksak Traditional Power Utility | | 466 | 75,738 | $ 228,234.80 | $ 3.01 | 869,717 |
| Tuntutuliak Community Service Assoc. | Tuntutuliak (7) | 399 | 43,963 | $ 100,930.75 | $ 2.30 | 542,072 |
| Unqusrag Power Company | Newtok | 315 | 39,791 | $ 60,148.68 | $ 1.51 | 274,245 |

(2007 PCE Statistical Report, State of Alaska)

# Fossil Fuel Resources

## Petroleum *Supply*

The AVCP Calista region has a few identified potential fossil fuel resource exploration targets and imports 100 percent of its petroleum. There are no refineries that exist in the region and distances from large bulk fuel facilities are far from villages making transportation of fuel an issue.

**Fuel Shipping**

Transporting the fuel from West Coast USA/Canada or Cook Inlet to Bethel and points along the Kuskokwim River requires the following steps: (1) line-haul barge transportation from the supply source across open ocean and up the Kuskokwim River to Bethel, (2) off-load and temporary storage at Bethel, and (3) transfer of fuel to smaller river barges and delivery to Kuskokwim area villages. The shallow nature of the Kuskokwim River above Aniak (between Bethel and Crooked Creek) provides the greatest challenge, both physically and financially, to delivering fuel to middle Kuskokwim River villages.

Both Yukon Fuel Company and Crowley Marine each operate tank farms in Bethel. Fuel for mid and lower Yukon villages is barged down river from Nenana to fuel storage facilities in villages along the Yukon River by Yutana Barge lines. Early spring often means air shipment by Everts Air Cargo or by other air cargo freighter to villages in the region when villages run out of fuel.

Disruptions in the supply and distribution chain of fuel throughout the system can create a severe and prolonged shortage of fuel and price volatility. Added surcharges when fuel often has to be delivered by air cargo, creates a additional hardship on village residents.

Fuel is delivered from the months of June to September with approximately 150 days of barge delivery. Bulk fuel storage for Bethel is shown as follows:

<u>Tank Owners / Total Capacity</u>
Yukon Fuel Co. 9.4 million gal
Crowley Marine 5.6 million gal

Airport 120,500 gal
Bethel Utilities Corporation 51,000 gal
U.S. Federal Aviation Administration 44,000 gal

## Natural Gas *Supply*

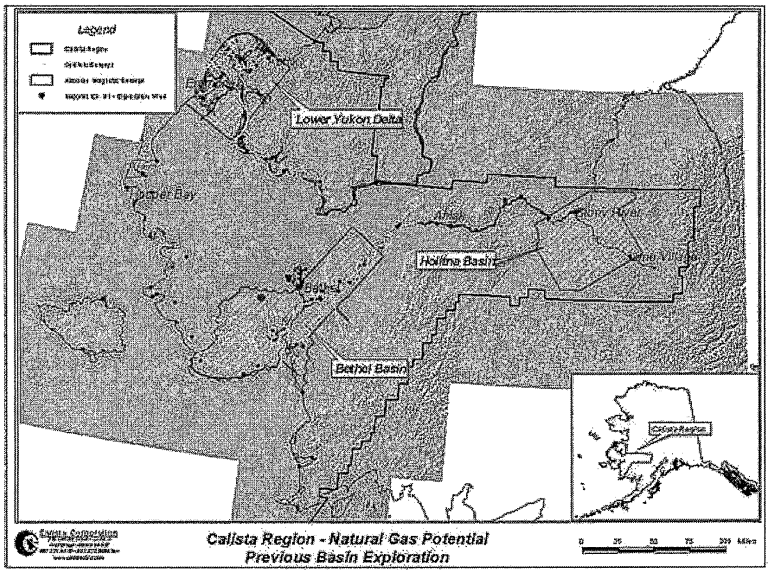
**Natural Gas and Oil Exploration/Venture Activities**

(Calista Corporation - AVCP 2004 Economic Summit)

Aeromagnetic surveys in the region conducted by the State of Alaska Division of Geological & Geophysical Surveys for conventional hydrocarbon resources focused on three geographic areas: The Bethel Basin, the Lower Yukon Delta, and the Holitna Basin. According to geologists the potential for conventional petroleum resources is nonexistent. The source rock studies done to date have been mostly negative in this regard. However, there has been no drilling conducted to provide information about subsurface conditions to make definitive results on the potential for shallow gas. And in each basin the potential for shallow gas within the Tertiary section has not been fully explored. As technology improves for developing small shallow gas resources then it is possible to re-examine these areas for exploration.

The Bethel Basin is a Cenozoic non-marine basin, roughly outlined by a 5800 square mile airborne magnetic survey area flown by the state in 1994-1996. The regions lone exploration well is the Napatuk Creek #1 drilled by Pan American in 1961 to a very dry depth of 14,890 feet. The main target was a very subtle low gravity area, which turns out to be on the flank of the basin. 2-D seismic data collected for Shell Oil in the early seventies outlined an elongate structural basin to the south (ed. near the village of Kipnuk). The Yukon Delta is a large modern deltaic complex underlain by non-marine Tertiary sandstone and shale, unconformably overlying a thick, complexly deformed flysch. The delta is on the edge of Norton Basin in Norton Sound. 2D seismic coverage by Amoco in the early eighties identified an antiformal closure (ed. at the mouth of the Yukon River) that was apparently slated to be drilled. The Holitna Basin is a Cenozoic non-marine tectonic basin in the lowland draining the Alaska Range to the east and the Kuskokwim Mountains to the west. It is adjacent to the Denali Farewell fault zone, a regionally dominant right-lateral fault system. It has many similarities to other interior basins like the Minchumina Basin further east. It is characterized by a prominent, but small, -40mgal gravity low. Note that it is also about 45 miles from

Donlin Creek. The Holitna is rimmed by Paleozoic basinal and platform carbonates; Triassic carbonates and marine siliciclastics.




# *Propane*

## *(LPG – Liquid Petroleum Gas)*

**Households and Utilities**

Propane is presently used in most villages in the region, primarily for cooking, and some water heating, and to a lesser extent space heating. Total Household and Utility Propane Demand in Bethel are approximately as follows:

ISO Container Barge (Gallons)
Bethel 378,000 household and 7,761,000 utility

## *North Slope Natural Gas*

In 2005 the Alaska Natural Gas Development Authority (ANGDA) conducted a study to look at the economics of a "bullet line" gas line from the North Slope to terminal facilities in Cook Inlet and deliver propane to marine accessible communities throughout Alaska.

"The purpose of the study was to gain a broad understanding of the required infrastructure, logistics and economics of the distribution of propane to marine-accessible communities from an enriched gas pipeline stream. If economics are positive, market forces would likely cause Alaska communities to supplement or replace diesel and home heating fuel with propane for electrical power generation and home heating. Information developed through this feasibility study will be used to determine whether a project of this type could be beneficial to Alaska communities and warrants further investigation." (Feasibility Study of Propane Distribution throughout Coastal Alaska – 2005)

## *Conservation*

Members of the AVCP Calista Regional Leadership stated energy conservation is a primary method and practice that can be engaged at every level of government, business and promoted in household programs. It is particularly important where businesses and organizations are dependent upon their constituent's ability to save on energy in order that they can both afford the costs of energy and support government and their local economy.

AVCP Calista Regional Leadership participants stated examples such as school programs and policies adopted by school boards that can be utilized in school programs and passed on to households with the active participation of parents. Utilities and other organizations have active conservation programs that can be expanded with community support with local ordinances and community development activities.

There are other working examples that provide an incentive for generating business and revenue. The State of Alaska reimburses up to $500.00 for an energy audit of homes. This audit also assists in identifying home improvements for weatherization and electricity savings that can be conducted by local or area businesses. These conservation activities help not only to conserve energy in the long run but increase local income and revenues. As part of a continued energy audit and maintainance program a sustained conservation program can be succesful for the long term.

State tax credit programs can provide an additional measure. Electric energy conservation can increase exponentially with a tax credit supported program. There needs to be a Business Energy Tax

Credit (BETC) along with a Residential Energy Tax Credit Program to provide double savings in local communities. Such credits need to provide communities a hedge against general inflation as they attempt to deploy renewable energy and conservation projects. Tax credit programs should also promote cogeneration, wind, and solar electricity (photovoltaics), to allow them to become more competitive so more people and businesses can make the investment.

Energy efficiency efforts need to be expanded, through legislative action. This might include making large individual projects eligible for such things as a Business Energy Tax Credit, establishing a Pass-through mechanism to allow many nonprofits, public agencies, tribes and others to benefit from this program, and the creation of the Renewable Energy Deployment Fund to help fund renewable energy and conservation projects.

# Renewable Energy Resources

The Fairbanks energy plan provides an excellent model and example to determine renewable energy alternatives based upon a MM per BTU cost. This type of energy development matrix provides a planning resource for determining a plan of finance and course of development for locally available renewable energy resources. The State of Alaska Energy Authority is to be developing such a matrix for each region of the state. It is expected that the AVCP Calista Region would be able to identify specific renewable energy resources that can be deployed in each sub-region based upon the state's effort.

## *Biomass*

Biomass resources are available in the AVCP Calista Region and include wood, plant and to some extent fish waste, other organic matter, or gasses from the decomposition of that matter. Currently there are no biomass fuels utilized for generation of electricity, commercial heat and transportation. Wood fired heaters and stoves are used in many homes throughout the region as a main source of heating. Wood fired steambaths exist in most every village in the region. Approximately 36% of heating is with wood in the region.

### *Woody Biomass*

A 2006 University of Alaska Cooperative Extension Service study for the Kuskokwim Native Association determined nearly 23 million ft3 commercial stands of spruce and 22.7 million ft3 of non-commercial

stands for a total 44.6 million ft3 grow in the Lower Kuskokwim. The study shows that it increases 1.3 percent annually. A similar analysis would be appropriate for the lower Yukon area communities to determine available woody biomass.

The Alaska Energy Authority's Biomass Energy Program provides practical working community scale working examples in other parts of Alaska that are applicable to the region, particularly in the middle Kuskokwim and lower Yukon parts of the region. The City of Craig's Gasification Heater System and wood fired heating systems in the interior Alaska for community facilities provide examples for project deployment. The "Fuel for Schools" program employed in the lower 48 states also provides a working program model for local school districts to plan and develop their own community heating replacement project.

Community or business wood chipper development to supply wood chips for wood fired community heating and home wood fired heating systems offers a viable economical development option for the AVCP Calista Region. There are a variety of low cost equipment and options that are available for community or business development considerations.

## *Fish Oil and Bio Diesel*

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A determination should be made as to

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The feasibility of producing by-product fish oil from shore-based and floating salmon processors on the Kuskokwim and Lower Yukon from as a byproduct of fish processing plants should be determined. This oil can be

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utilized as boiler fuel. AEA conducted successful tests of raw fish oil/diesel blends in a 2.2 MW 2-cycle Fairbanks Morse engine generator using 50-50 raw fish oil-diesel blend for power production.

Biodiesel is an engine fuel manufactured from renewable sources, such as vegetable oils, recycled cooking greases or oils, or animal fats. Biodiesel is a U.S. EPA-approved substitute manufactured to established industry standards. Currently AEA is working with University of Alaska Fairbanks ' (UAF's) Arctic Energy Technology Development Laboratory, Alaska Department of Environmental Conservation, and the National Park Service to test performance of

biodiesel in generators at UAF and Denali National Park. The team has produced a brochure describing the project.

### *Municipal Waste*

Solid wastes offer potential for providing additional local heating of public facilities. Waste heat energy should be incorporated into each community biomass wood energy project to determine feasibility for combined operations.

"Alaskans generate approximately 650,000 tons of garbage per year. Currently there is no large scale recovery of energy from burning unsorted garbage in Alaska. The Sitka Waste-to-Energy facility operated from 1985 to 2000 and provided heat to nearby Sheldon-Jackson College. Fairbanks Memorial Hospital operated a small onsite heat recovery incinerator from 1989 to 2001..." (Alaska Energy Authority website)

### *Geothermal*

Geothermal resources include high-temperature (100 degrees Celsius or 212 degrees Fahrenheit and higher) for electricity generation, intermediate temperature (100 – 50 degrees C) for industrial, agricultural and municipal applications and low temperature heat pump applications. There is one potential site near

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the NYAC gold mining area above the village of Tuluksak

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Mount Hamilton on Ophir Creek southwest of Aniak, and another small site in the upper Chuilnuk River with the closest village at Stony River. The site

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on Ophir Creek has potential for producing between 200 and 300 degrees of heat. There are generally two uses for geothermal heating, these being direct heating and electricity production.

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NYAC has an active gold mining exploration program and any energy development activity would require coordination with the Calista Corporation and local mining operators.

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Water from the Ophir Creek Hot Springs are currently utilized by a local family at a nearby residence.

### *Hydroelectricity*

Small in-river hydropower projects may offer a substantial renewable electricity supply for villages along the Kuskokwim and Yukon Rivers. Each community needs to be enabled to determine to what extent they can supplant or replace their electrical power with in-river power plants. The state should revise their energy funding program to allow such determinations so that communities can take the next step if proven feasible. There has been one identified hydropower resource potential at the upper portion of the

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near the village of Akiak

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. However, a study conducted to determine this resource determined environmental considerations may outweigh the development of this potential. The project is located in a wildlife refuge and has potential

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riparian impact as well as impact upon fisheries for both subsistence and commercial uses.

In other parts of the world, Ocean Wave Generation of electricity through conversion of ocean current, swell, wave action, tidal gradients, and thermal gradients is being successfully demonstrated. There does need to be further analysis of ocean conditions near villages along the eastern Bering Sea coast. There needs to be a determination of what levels of significant year-round wave action and tidal swells are available near coastal villages that can support Ocean Wave Generation. Collaborations with organizations such as the Electric Power Research Institute may be helpful in identifying suitable locations in the region for siting a wave energy power plant. The State of Oregon was the site of the nation's first filing for a commercial wave energy park with the Federal Energy Regulatory Commission (FERC). This agency has some authority to site wave facilities under the Energy Policy Act of 2005. So far there have been eight applications for projects proposed by developers and coastal counties.

### *Solar*

Solar energy presents a challenging renewable resource for development in the region. Annual average solar insolation is calculated at 3.5 to 4.0 kWh/$m^2$/day. There is one active solar power generation system in the region located at Lime Village,

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Conservation

## Homeowners

Promote cost effective efficiencies, practices, measures and utilization of renewable resources.
Utilize the state's energy audit program, including Alaska Housing Finance Corporation weatherization and other energy assistance programs to promote energy efficient appliances and renewable resources for space heating, water heating and electricity (where appropriate). The AVCP Calista Regional Leadership will work with the state to acquire contracting and services in these program areas in order to effectively promote energy efficiency.

Improve services and incentives for energy assistance and weatherizing homes.
Develop a plan for consolidation of energy assistance resources services by non-profit, local and tribal organizations. This may include such activities as a "one-stop-shop" approach to application for services for homeowners to access financing and resources. Contracting with state agencies that traditionally have provided grants and financing should be negotiated. Establish a coordination plan of financing for energy efficiency projects with state and private lending institutions.

3. Energy Efficiency Business Development

Develop a model plan for business development at the community and regional level for energy audits and homeowner improvements. The state can also look to providing tax credits and additional financing to overcome development costs. Develop a model process for easy access by homeowners to energy efficiency financing and resources.

4. Homeowner Conferences and Education

Establish annual Homeowner Energy Efficiency Conferences throughout the region where homeowners can access information, education, financing and other homeowner energy development resources. Work with industry to develop a Homeowner Energy Efficiency Catalog and Guide.

5. Efficiency Measures

Work with the state in identifying incentives and measures that help improve home energy efficiency. These may include training and certification of local businesses in constructing, installing and maintaining energy efficient heating equipment. Heating

ducts, for example, are designed and constructed in a variety of fashions; and properly trained and certified local contractors in the construction and sealing of heating ducts can help reduce energy costs in homes and facilities that contain heating ducts. In addition to the grants and funding provided for weatherization for eligible homeowners, businesses should be able to receive an energy tax credit and participate in the financing and development of energy efficiency projects.

6. Encourage energy-efficient building practices beyond code levels.
Promote local review and consideration of construction codes and home improvement practices currently employed by agencies and area businesses that affect energy efficiency. Identify current available and appropriate technologies and standards of practice that exceed minimum code requirements. Develop a model home development plan that integrates optimal energy efficiency with on-site renewables. This concept may include a superefficient building shell, solar equipment, advanced heating and ventilation systems, and electronic controls to help homes approach zero net energy use.

Encourage more energy-efficient manufactured housing utilized in the region. Establish partnerships within the industry that serves the region to design and market energy-efficient manufactured homes that meet the specific needs and conditions of the AVCP Calista Region.

## Businesses

7. Encourage businesses to invest in cost-effective energy efficiency and renewable energy.
Incentives for business would be in the form of tax credits to businesses for investments in energy efficiency and renewable energy to help them overcome the higher first-costs. This should be coordinated with the above energy assistance and weatherization programs, the State Energy Loan Program. The state should work with local and area businesses and financing institutions in creating a easy access for financing for businesses to encourage their investment.

8. Review energy standards for commercial buildings.
State code for commercial buildings sets minimum standards that require new buildings to include all practicable energy efficiency measures. Goals should be set to save a certain percent over the existing energy code. New technologies and practices make additional cost-effective energy savings possible.

9. Promote energy efficiency building commissioning as standard practice in non-residential buildings.
The building commissioning process utilized primarily in public facilities ensures that the complex equipment providing lighting, heating, cooling, ventilating and other amenities in buildings works together efficiently. Studies on commissioning show that the practice provides savings of 15 to 30 percent.

## Public Buildings

10. Reduce School Energy Costs.

Encourage school districts to set aside funds for improving the energy efficiency of K-12 schools in their service areas. These funds can go towards energy audits and recommended measures. The state needs to help school district coordinate their program, provides technical help and quality control, manage a database to track the program, and reports on expenditures and results. Encourage school districts to establish their own long term energy policy and strategy. Examples of energy cost savings programs that may be appropriate include the "Fuel for Schools" program employed in the lower 48 states and the gasification heating project at Craig which installed a heating system using wood chips form a local sawmill.

11. Recommend the development of energy efficiency performance school buildings.
Encourage the state and school districts to design standards and a model for energy efficiency performance buildings. Goals should be established for each school district for school building planing and development. The state should be encouraged to set up training for school staff, construction vendors, administrators and facility managers on the advantages of building high-efficiency, environmentally sound buildings.

12. Provide energy tax credits for local governments and schools.
Pass-through provision of energy tax credit should be made available and coordinated with public funding and private financing. The school or local government owner of a conservation project should be allowed to transfer the state energy tax credit to a business in exchange for a cash payment. The state should determine how to coordinate these efforts with its existing and new energy funding and financing programs to invest in public building conservation measures.

13. Establish goals for increasing the energy efficiency of new and remodeled public buildings by 20 percent or better.
New public buildings and major renovations should have a goal of attaining at least 20 percent more energy-efficiency

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than required by building codes. Local governments should work with the funding agencies, contractors and their design teams to ensure the public building projects meet the intended goals.

14. Encourage local governments and non-profit organizations to achieve 20 percent energy savings in existing buildings
A reduction of energy use in existing publicly funded buildings by 20 percent should be established in each community. Each local government and non-profit organization should conduct an energy audit and energy efficiency improvement plan.

15. Establish energy savings performance contracting for public buildings.
The state is encouraged to help develop and establish energy savings performance contracting which would provide guaranteed energy savings to secure financing and pay for efficiency improvements without increasing operating budgets. A Model energy savings performance contract should be developed. This is an agreement between a business performing the energy efficiency improvement and a building owner. The owner

uses the energy cost savings to reimburse the business and to pay off the loan that financed the energy conservation projects. A model Request for Qualifications (RFQ) should also be developed to pre-qualify businesses to perform energy efficiency improvements for public projects.

## Transportation

18. Reduce single-person vehicular and vessel travel.
One of the most effective methods to dependence on gasoline and diesel is by reducing vehicle miles and single person travel. Fuel for travel is already becoming more cost prohibitive and fuel use for travel is

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declining because of increasing prices. Promoting transportation pooling and development of some form of cooperative joint transit between community residents may become more necessary as fuel becomes more expensive and prohibitive. A community plan for transportation and travel and vehicular use within community

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boundaries is an appropriate topic for community energy policy development and strategy planning.

19. Encourage hybrid gas-electric vehicles where appropriate and applicable.
Hybrid gasoline-electric vehicles

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reduce fossil fuel use and dependency. Whether

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hybrid vehicles can be viable in the region needs to be explored.

Work with aviation industry to determine cost effective strategies for reducing fuel costs and sustaining the industry within the region.
Commercial aviation provides the bulk of transportation of goods and services and passenger transport for the region. The industry is faced with the same rising costs of fuel as the general public. The AVCP Regional Leadership should work with representatives of the aviation industry and state and federal agencies to determine and establish goals for working together and identifying plans and strategies for reducing the costs of aviation transportation that

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will help sustain the industry and meet the needs of the region for passenger transport and transport of goods and services.

Renewable Energy Deployment

22. Establish Renewable Energy Action Plan.
Work with the state in assessing the renewable resources available within the region based upon a MM/BTU cost for development. This matrix will assist in designing a specific set of renewable action plans and projects for each sub-region of the AVCP Calista Region.

The goal for this plan is to identify those renewable resources that are available for feasible energy development in each community. The AVCP Calista Region encourages the production of energy from renewable sources in a manner that involves community economic development. Two examples of renewable resources include wind energy and woody biomass available in the region.

Alaska Village Electric Cooperative and Chaninik wind Group are actively involved in wind energy development.

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AVEC has wind towers installed at Toksook Bay and Kasigluk. The AVCP Calista Regional Leadership supports and promotes the efforts of AVEC in further developing its capacity and capability for serving other villages included in its membership, and will work with them in these efforts. The Chaninik Wind Group has received a $4.8 million grant for a regional wind energy project to develop a local area wind energy farm and determine the potential for building out and expanding the project to a larger wind farm that can be connected to other Kuskokwim area communities.

Middle Kuskokwim and Yukon communities are situated where there is potential for woody biomass energy projects

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utilizing wood fired boilers and wood chippers for space heating of public facilities. Project examples include a wood fired boiler in the interior Alaska and a gasification plant at the City of Craig, Alaska.

Participants in this energy plan promote investment in the application of In-Stream Turbines in the Kuskokwim and Yukon Rivers to determine whether or not in-stream turbines

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are feasible for communities in the region.

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The state is encouraged to develop financing to help organizations buy these devices.

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The community can then apply for funding to purchase the in-stream turbine once they have established feasibility. The state is encouraged to develop financing to help organizations buy these devices.

The AVCP Calista Regional Energy Leadership desires the state to study and determine ocean wave development potential, and electrical equipment and transmission requirements for communities along the eastern Bering Sea coast.

The AVCP Calista Regional Energy Leadership seeks the state's assistance to help determine geothermal potential at

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as well as in-river hydroelectric potential for

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nearby communities.

23. Support community development through renewable resources.
The AVCP Calista Regional Leadership promotes and encourages economic and community development practices for each renewable resource development project. Project examples include business development and coordination with agencies, finance institutions, local organizations and area businesses utilizing tax credits, state loan and grant programs, energy audit funding and private financing. Coordination and planning that involves the community and local area businesses encourages and promotes community and economic development. Other practices

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include utilizing existing models such as the "Fuel for Schools" program employed successfully at Craig, Alaska and other parts of the country. The AVCP Calista Regional Leadership's policy is to ensure that renewable resource development in the region engages and increases the capabilities of local businesses and community members.

Energy Supply

## Utilities

24. Encourage Public/Private Support Strategies that effectively reduce the cost of energy for utilities and consumers in the region.
The AVCP Calista Regional Leadership is unanimous in supporting the efforts of its utilities in seeking direct support from the state to reduce the cost of fuel for electricity to $10.00 oer MM/BTU as recently proposed

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from utilities and tribes to the Governor and Legislature. The governor and legislature are to meet by special session to deliberate on the costs of fuel as it affects utilities and consumers. The AVCP Calista Regional Leadership will work with the state to apply this reduction across all utilities in the region in order that they may reduce the rates for homeowners and businesses.

25. Encourage needed investments in electricity supplies and delivery systems for efficient operations, maintenance, upgrades and new development.
It has been estimated that

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approximately 55% of existing facilities are in need of upgrades and improvements throughout the region. The AVCP Calista Regional Leadership will work with the state to acquire the funding and support for its utilities to accomplish these needed

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improvements. The state is encouraged to invest more resources in the Rural Power System Upgrade which installs efficient generators and dual-generation systems with switch gears.

## Bulk Fuel

Encourage cooperative bulk fuel purchases.
The AVCP Calista Regional Leadership will work with the state,

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fuel supply operators and transport companies to identify strategies for reducing costs of fuel delivery. Collective and cooperative purchasing, bulk fuel storage and transport is encouraged. The AVCP Calista Regional Leadership will also work with other federal agencies such as the Department of Defense and the State of Alaska National Guard in determining

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if these agencies resources are available and how they may be utilized to help

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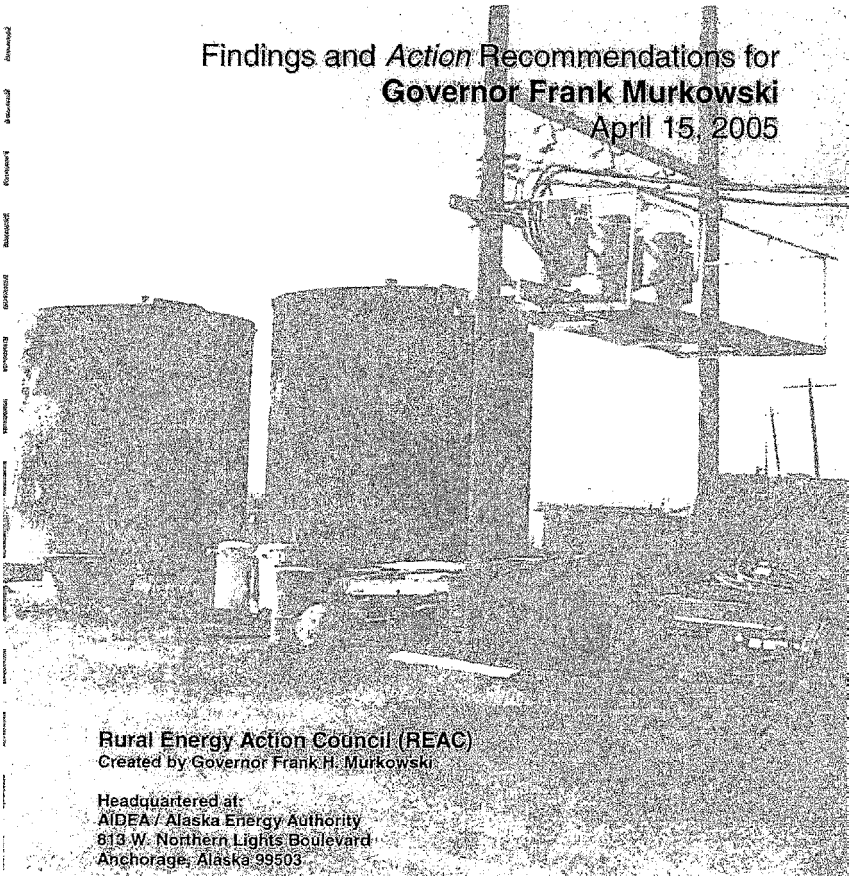
reduce the cost of fuel delivery in the region.

# Rural Energy Action Council

Findings and *Action* Recommendations for
**Governor Frank Murkowski**
April 15, 2005



**Rural Energy Action Council (REAC)**
Created by Governor Frank H. Murkowski

Headquartered at:
AIDEA / Alaska Energy Authority
813 W. Northern Lights Boulevard
Anchorage, Alaska 99503

# Findings and *Action* Recommendations for **Governor Frank Murkowski**

## April 15, 2005

Prepared for:

Rural Energy Action Council (REAC)
Created by Governor Frank H. Murkowski
February 7, 2005

Prepared by:

AIDEA / Alaska Energy Authority
813 W. Northern Lights Boulevard
Anchorage, Alaska 99503
(907) 269-3000
(907) 269-3044 FAX
Toll free in Alaska (888) 300-8534

For an online version of this publication, go to
www.aidea.org/RuralEnergyActionCouncil.htm

# Rural Energy Action Council Members

**Nels A. Anderson, Jr., Co-Chair**
Dillingham - Southwestern Alaska

**Edgar Blatchford, Co-Chair**
Anchorage - Alaska Department of Commerce, Community and Economic Development
Commissioner

**Andy Baker**
Kotzebue - Northwest Alaska
Baker Professional Services
Owner

**Mike Barry**
Anchorage - AIDEA/AEA
Chairman of the Board

**Ernie Baumgartner**
McGrath - Interior
Raven Technology Services
Owner

**Bob Martin**
Juneau – Southeast
Bureau of Indian Affairs
Chief Engineer

**Gene Peltola**
Bethel – Western Alaska
Yukon Kuskokwim Health Corporation
President & Chief Executive Officer

**Orie Williams**
Fairbanks - Interior
Doyon, Limited
President & Chief Executive Officer

**Alaska Energy Authority**

**Mike Harper**
Deputy Director of Rural Energy

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# Message from the Co-Chairs

Nels A. Anderson, Jr.

Commissioner Edgar Blatchford

Dear Governor Murkowski:

It is my pleasure to transmit this report that you commissioned February 7 to look into a number of recommendations that you could use to help bring down the cost of energy in Rural Alaska. The Rural Energy Action Council, made up of eight members from across the state, worked diligently to give you a number of action items that you could use immediately.

We met two times by teleconference and three times face to face to discuss all of the issues you named for study in the press statement that authorized the creation of the Rural Energy Action Council.

On behalf of the Rural Energy Action Council, I would like to thank you for your leadership in bringing the need for low-cost energy to the attention of Alaskans. As you stated in your press statement, your address to the AFN Convention last fall, and in your State of the State address, that low cost energy is a vital part of making sure that economic development occurs in all parts of Alaska.

We looked closely at PCE, conservation measures, alternatives to diesel, the creation of fuel coops, and cost of energy for our schools. We hope that these recommendations will help assist in getting low cost energy delivered to our villages across Alaska.

We kept in mind your goal of producing a number of recommendations that you could use immediately. PCE is one of those items that if funded before the end of the session would have the most dramatic effect on taking the sting out of ever increasing costs of energy for people in the villages of Alaska. We also noted your efforts to get one-time grants to our villages to help them get the money they need for fueling their villages next year.

We also felt it necessary to look at a number of initiatives that would need to begin very quickly so that they can start producing results next year. A case in point, we felt that the various state and federal agencies could start moving their approval process for fuel loans to early in the year. This would allow our villages to have funds available for early spring delivery and perhaps give the villages a tactical advantage in purchasing when the price of heating fuel and diesel is moving down after demand slacks off with warmer weather.

We are hoping that these recommendations can be taken seriously and that many of them will be adopted as part of your administration's strategy to bring down the cost of energy in Rural Alaska.

Co-Chair Blatchford and I would like to thank all of the agencies, AIDEA-AEA personnel, the Denali Commission, RurAL CAP, AVEC, the Department of Commerce, Community and Economic Development and so many others who worked to make this report possible.

Also, you could not have picked a better Rural Energy Action Team to work on this task for you. Each of the members took their jobs very seriously, gave up valuable time from their normal duties, and made very valuable contributions to the mission you gave us. If it were not for these contributions, the report would not be as credible as we think it turned out.

I'm encouraging Governor Murkowski to use all means at his disposal to have a strong public outreach effort to advance these actions. The Rural Energy Action Council will stand strongly behind him.

Finally, thank you Governor for allowing those of us that live in Rural Alaska to advise you on an issue that has long remained in the background for too long. We hope that your leadership on this matter will help all of us focus on the need to come up with practical solutions to bringing low cost energy to villages across the state. It is a great challenge and the opportunities for success are greatly increased by your commitment to making sure that low cost energy is addressed in your administration.

Sincerely,

Neis A. Anderson Jr.

Neis Anderson, Jr.
Co-Chair

*Members of REAC:*
*Commissioner Edgar Blatchford, Co-Chair*
*Ernie Baumgartner*
*Andy Baker*
*Mike Barry*
*Bob Martin*
*Gene Peltola*
*Orie Williams*

## Governor Murkowski's Directive

Early in February, the Governor requested a report from the group by April 15, 2005, on short-term proposals to reduce the high cost of energy in rural communities.

The group was to analyze and make recommendations in several areas, including:

- incentives to lower energy delivery costs
- regional supply and distribution centers
- cooperative fuel purchases
- power plant operational efficiencies
- consolidation of energy providers
- a review of Alaska Energy Authority (AEA) programs
- acceleration of renewable energy efforts, and
- energy conservation measures.

REAC was to build on the work done in 2003 by the Alaska Energy Policy Task Force (EPTF) for the 23rd Legislature (see Mission and Goals following page and go to the link http://www.aidea.org/EnergyTaskForce.htm for a complete copy of the EPTF Non-Railbelt Report). REAC was also to use other information to devise short-term and practical proposals that reduce the cost of energy in rural Alaska. According to the Governor, "The operative word in this group is 'action'."

The Governor, in his address to the October 2004 Alaska Federation of Natives convention, is quoted:

- To advance solutions to these problems I am announcing today that our Department of Commerce, under Edgar Blatchford's leadership, will work with regional organizations such as RuralCAP, AITC, village organizations, University of Alaska, the state, the federal government, and the Denali Commission to coordinate efforts to lower the cost of energy for our state and focus on making our state and villages energy self-sufficient by 2010.
- Another thing about the high cost of fuel in rural Alaska is that some rural communities were threatened with heating fuel shortages this winter.
- BECAUSE OF THIS PROBLEM WITH THE HIGH COST OF ENERGY IN RURAL ALASKA I AM ANNOUNCING TODAY THAT I WILL PURSUE A NEW ASSISTANCE PROGRAM FOR OUR SMALL VILLAGES IN NEED.
- I am very aware of difficulties in many small rural Alaska villages with limited funding available for local services. The high price of fuel, oil & gasoline has put an almost insurmountable burden on these small communities and their residents.

- We have a bright future ahead in rural Alaska
    - A future that includes a quality education and good jobs for our young people.
    - A future that makes low cost energy available to villages.

The Governor, in his State of the State address in January 2005, included the following comments:

- I also propose $6.5 million dollars to offset high energy costs in smaller cities, along with 20.7 million dollars to fully fund Power Cost Equalization. This will mark the first year since creation of the endowment that the PCE program has been fully funded. This will lower fuel costs in rural Alaska and create new jobs, thereby strengthening their communities.
- We've had some success in dealing with high energy costs. We acted when the Bush caucus came to us last June with concerns about a number of rural communities having difficulty purchasing winter fuel.
- We developed a plan that helped even the most financially-strapped villages, and more importantly, a plan that will help the villages better manage their own winter fuel programs going forward.
- Tonight, I renew the commitment I made at the Alaska Federation of Natives convention in October to aid rural Alaska in obtaining lower-cost energy to sustain jobs.
- I have asked the Department of Commerce, Community, and Economic Development and the Alaska Energy Authority to establish a work group from rural Alaska to recommend ways to lower its energy costs, building on the significant Rural Energy study* done by the Alaska Energy Authority in April 2004 and the work done by the Alaska Energy Task Force you created in 2003.
- I thank former Legislator Nels Anderson for his leadership in pushing for lower cost energy and greater employment in rural Alaska. And a thank you tribute to the late Harvey Samuelson—a great Alaskan.

*Go to http://www.aidea.org/AEAdocuments/REPV1ExecutiveSummary.pdf for a complete copy of the Alaska Rural Energy Plan Executive Summary.

# Energy Policy Task Force statements

## A. Mission

*"Electricity is essential to meeting Alaska's economic, environmental, and educational development goals. The State will conduct its activities affecting energy in such a manner as to:*

- *Promote reliable and secure electric power systems*
- *Promote the lowest cost for consumers*
- *Stimulate the economy*
- *Provide employment opportunities for Alaskans*
- *Improve the quality of life for all Alaskans*
- *Promote workforce development, including training Alaskans, for Alaska's utility sector.*
- *Enhance the State's social, cultural, economic and environmental assets*

## B. Goals

*(Listed in no particular order)*

- *Achieve sustainability.*
- *Develop Alaska's position as a leader in competitively priced and reliably available electricity.*
- *Develop Alaska's electrical infrastructure while maintaining competitively priced energy.*
- *Ensure security of physical and cyber energy infrastructure.*
- *Promote research, development and demonstration of clean and renewable energy technologies.*
- *Promote conservation and energy efficiency across all of Alaska.*
- *Develop Alaska as a world leader in using and exporting competitively priced and reliably available fossil fuels.*
- *Ensure standardized and consistent permitting and regulatory processes.*
- *Establish Alaska as a national leader in developing energy projects using its natural resources, including its workforce.*
- *Develop viable local solutions to provide cost-effective electric energy for small, geographically remote Alaskan communities.*

# Executive Summary of Actions

REAC believes the following areas offer the best strategies and instruments to achieve short term success in lowering the cost of energy in rural Alaska. For each, more detailed background, findings and recommendations follow.

For the purposes of this report, short-term is defined as within one year, i.e., before April 15, 2006.

1. Fully fund the Power Cost Equalization (PCE) program.
2. Front-load the PCE endowment.
3. Create a bulk fuel operator technical assistance program.
4. Including downstream tanks and pipes into upgrades.
5. Support the creation of regional bulk fuel cooperatives.
6. Enable single and cooperative applicants to receive higher loan limits for the bulk fuel revolving loan program.
7. Improve power plant operational efficiencies and remote capabilities.
8. Increase support for alternative energy systems, such as coal, in-stream, wind and gas projects.
9. Accelerate renewable energy programs and implement energy conservation measures.
10. Continue Low Income Home Energy Assistance Program (LIHEAP) funding and programs.
11. Create a new line-item for energy funding for school districts.

Items of interest that came up during deliberations, but require a longer term, are listed:

- Economic study of impacts of high cost of fuel in rural Alaska on net migration to urban Alaska
- Set up regional energy centers on rural campuses
- Fund feasibility study to examine links with the Railbelt Energy Grid
- Set up a fuel price reporting system for "non-PCE" communities
- Divest the State of rural energy infrastructure
- Transportation and distribution systems.

## Issue: Power Cost Equalization (PCE) Program Funding and Intent

**Recommendation #1:** Fully Fund PCE
**Rationale:** Rising fuel costs need to be addressed
**Action:** Advocate for full funding, Gather support
**Funding Required:** Fully fund PCE at $21.5 Million

***Background:*** SLA 1993 reads,

> *"(a) the legislature finds that adequate, reliable, electric service at affordable rates is a necessary ingredient of a modern society and a prosperous developing economy. The legislature further finds at the current stage of social and economic development in the state, direct participation by the state is necessary to assist in the development of a regional electric transmission infrastructure and to assist in holding rates in high cost service areas to affordable levels.*
>
> *"The legislature recognizes the high cost of electric power in rural Alaska and intends that funding for Power Cost Equalization from the general fund and from the power cost equalization and the rural electric capitalization fund remain at a minimum of $17,000,000 annually through the year 2013. The legislature further intends that this long-term commitment to the power cost equalization program will permit and encourage the electric utility industry and its lenders to develop the plans, make the investments, and take other actions that are necessary or prudent to meet the needs of residents in rural Alaska." (SLA 1993)*

The PCE program pays a portion of approximately 30% of all kWh's sold by the participating utilities. In the past three years, the program has been funded at the $15.7 million dollar level. With program demand exceeding $15.7 million each year, pro-rata reductions have been necessary. This program currently does not provide PCE benefits to school facilities and commercial buildings. Governor Frank Murkowski mentioned during his 2005 State of the State address that it would take $20.7 million to fully fund the PCE program. An additional $1 million would ensure coverage of the growing number of residential homes and families, along with the increasing fuel expenses across rural Alaska.

See Appendix A to review the PCE Blue Ribbon Committee Executive Summary (1999). See Appendix B for Tabled PCE Recommendations.

## Issue: Power Cost Equalization (PCE) Endowment Fund

**Recommendation #2:** Fully fund the PCE Endowment Fund
**Rationale:** Capitalization ensures long-term sustainability of fund at sufficient levels
**Action:** State of Alaska and the Federal Government contribute to the Fund
**Funding Required:** $15 million annual deposit for 7 years to the Fund by the State and Federal Government (combined contribution = $210 Million)

The following table shows that the Fund would need $210 million of capitalization at earning rate of 5.5% to fund the annual PCE cost of ~$21.5 million.

**PCE ENDOWMENT FUND CAPITALIZATION ESTIMATE**
**Status - January 31, 2005**

| | | | |
|---|---|---|---|
| PCE Endowment Fund | | | |
| MV at 6/30/04 | 179,303,474.00 | | |
| Earnings through 1/31/05 | 11,707,227.00 | | |
| Withdrawals through 1/31/05 | (8,886,316.00) | Remaining withdrawal amount: | |
| MV at 1/31/05 | 182,124,384.00 | 11,369,100 | FY 2005 7% |
| | | 2,200,000 | FY 2004 supp |
| YTD Earnings Rate (annualized) | 11.19% | (8,886,316.00) | |
| Remaining withdrawals estimated for FY 2005 | (4,682,784.00) | 4,682,784 | |
| Assuming capitalization of endowment at 7/1/05 | | | |
| MV at 1/31/05 | 182,124,384.00 | | |
| Estimated Earnings for FY2005 (February - June 2005) | 5,175,380.00 | assumes an earnings rate of | 7% |
| Remaining withdrawals estimated for FY 2005 | (4,682,784.00) | | |
| Estimated MV at 7/1/05 | 182,616,980.00 | | |
| Capitalization | 210,000,000.00 | | |
| Estimated MV after capitalization | 392,616,980.00 | | |
| % of MV | 21,593,933.90 | | 5.5% |
| | | available for program (not taking into account three year monthly average MV calculation) | |

## Issue: Bulk Storage Operations and Maintenance

**Recommendation #3:** Create a State-funded Bulk Fuel Operator/Owner Technical Assistance Program
**Rationale:** Specialized technical assistance supports sustainability efforts
**Action:** Advocate for full funding of new program
**Funding Required:** Minimum $300,000

***Background:*** Tank farm operators and power plant operators currently receive training at the Alaska Vocational Technical Center (AVTEC). Other vocational and technical training facilities in Alaska that offer alternatives to regionally based training include the Alaska Technical Center (ATC) in Kotzebue, the Ilisagvik College in Barrow, and the Southwest Alaska Vocational Educational Center (SAVEC) in King Salmon.

Training qualified tank farm operators helps reduce Operations and Maintenance (O&M) costs and long term repair and replacement costs by extending the useful life of the facility. Qualified operators also help control local fuel costs by reducing the amount of fuel lost through leaks and spills. At this time, AEA does not have a technical assistance program to help local tank farm owner/operators address maintenance and repair issues that arise at their facilities and provide some ongoing, facility specific training. Yet, AEA currently operates a circuit rider program to provide technical assistance to village electric utilities.

This program would provide technical assistance and support for minor repair and O&M issues, as well as help give advice in following the procedures and practices set out in the business plans.

One existing program is called the Rural Alaska Fuel Services (RAFS), Inc., a private, not-for-profit service company for Alaska's small tank farms. The RAFS mission is "to provide bulk fuel tank farm services in rural Alaska in such a manner as to achieve sustainability and meet all state and federal regulatory requirements." See Appendix C for additional background on RAFS, Inc.

## Issue: Scope of Bulk Fuel Upgrade Projects

**Recommendation #4:** Initiate a program to upgrade residential fuel storage, day tanks and piping systems in rural Alaska
**Rationale:** Inadequate and often incompatible downstream facilities defeats purpose of owning code-compliant bulk fuel tank farm facility
**Action:** Advocate for a new program
**Funding Required:** Minimum $1 Million

***Background:*** The Denali Commission funds bulk fuel upgrades, but the program is limited to bulk fuel tank farms and intermediate tanks. Down stream facilities such as day tanks, individual residence fuel storage and piping, etc, are beyond the scope of this program. In many cases, these downstream day tanks and residential fuel systems are inadequate. Some day tanks lack overfill protection, such as high level alarms and automatic shut off switches. Many residential fuel systems are constantly losing fuel because of leaks. Some of these leaky systems are the result of using components that were never intended for that purpose.

In addition to the environmental damage to a community, fuel lost through leaks and spills has a very definite economic impact on the community. Fuel that is lost through leaks and spills must be replaced to meet the community's fuel needs. Therefore, some portion of a community's fuel inventory is purchased twice. Rural communities must get full value for the fuel that is purchased.

Implementing this recommendation would save on mobilization and demobilization costs if upgraded in conjunction with the Denali Commission funded project and allow these down stream upgrades to be accomplished at the lowest possible cost. The upgrades under this new program involve teacher housing and multi-family dwellings where threaded piping is commonly seen. Overfill protection at residential heating oil tanks may include such things as: double wall tanks, filters, flex hose, and improvements with venting, fill connections, gauges and float fill warning system.

## Issue: Bulk Fuel Cooperatives

**Recommendation #5:** Develop bulk fuel cooperatives
**Rationale:** Reduce the cost of fuel delivered and used; bulk fuel purchases provide opportunities for discounted rates
**Action:** Direct DCCED to establish cooperatives
**Funding Required:** Eight cooperatives at $50,000 each. 8 x $50,000 = $400,000 for start-up, support services, technical assistance, etc.

***Background:*** A bulk fuel cooperative is a consolidation of a stand-alone or a consortium of substantial fuel buyers in rural Alaska, including such user groups as school districts, village corporations, city governments and tribal governments. A single entity representing two or more sites would need to be organized in participating geographical areas, and would be responsible for the management of bulk fuel purchases on behalf of the cooperative members. Based on previous work done with cooperatives, it is anticipated that eight (8) entities could be developed initially. This would include: Kodiak, Aleutians, Bristol Bay, Bethel area, Lower Yukon, Bering Straits, NANA, and the Yukon Flats area.

Bulk fuel cooperatives may save money by purchasing bulk fuel, a service that the Bureau of Indian Affairs offers through the Alaska Resupply Operation (go to http://www.access.gpo.gov/nara/cfr/waisidx_98/25cfr142_98.html for more information). An existing facility with excess storage capacity is Adak's 22 million gallon facility, owned by the Aleut Corporation and available for bulk fuel storage.

The Western Alaska's Fuel Buying Group helped several members find a fuel vendor that sells and delivers fuel at a rate much cheaper than what it would have cost the utility by ordering fuel independently. The coop has proven that there are benefits to ordering in bulk and in large quantity, something that is nearly impossible to undertake as one utility or a community of users. A representative of the Nushagak Electric and Telephone Cooperative touted that the Coop has been able to order fuel at as much as one dollar cheaper than other alternatives. However, as more fuel vendors become "street smart" with regard to bulk purchases, financial savings may be harder to get. Having large storage capacity definitely helps a utility in ordering a year's worth of fuel.

Despite the praises of this particular success, there have been many disappointing, but not completely failed attempts at creating cooperatives. Calista Corporation created a subsidiary called the Western Alaska Village Enterprises (WAVE), a distributor of goods for village merchandise stores that expanded into selling fuel at discounted rates under WAVE Fuels. Due to the enormous expenses involved in operating the business, its service downsized from a region-wide area to operating a gas and fuel service station, NorthStar Gas based in Bethel. Should the business stabilize and grow, WAVE plans to expand its business into other regions in the future.

## Issue: High Cost of Bulk Fuel in Rural Alaska

**Recommendation #6:** Under Alaska Energy Authority's (AEA) Bulk Fuel Revolving Loan Fund (AS 42.45.250), allow the maximum amount borrowed by cooperatives formed under AS 10.15 to be based on the number of eligible communities that belong to the cooperative, and increase the loan limit above $300,000.
**Rationale:** Increased bulk fuel storage capacity and rising fuel costs has resulted in communities needing more financial resources to purchase bulk fuel; the formation of cooperatives may allow volume discounts for bulk fuel purchases.
**Action:** Amend AS 42.45.250 (e) to allow the maximum loan amount to cooperatives formed under AS 10.15 to be based on the number of eligible communities belonging to the cooperative. Amend AS 42.45.250 (e) (1) to increase the maximum loan amount above $300,000.
**Funding Required:** Amending AS 42.45.250 (e) will not have a fiscal impact on the Bulk Fuel Revolving Loan Fund. Amending AS 42.45.250 (e)(1) may have a fiscal impact and require additional capitalization of the Bulk Fuel Revolving Loan Fund, but to determine the fiscal impact will require additional information that is not available at this time.

***Background:*** Rising costs of bulk fuel for delivery to rural communities combined with increased bulk fuel storage capacity in some communities, has created a situation where the ability to pay for bulk fuel deliveries is becoming increasingly difficult, especially the decrease in revenues being experienced by rural communities (See Appendix D for Sample of the Price of Fuel and Appendix E for AEA Energy Fuel Survey). One potential method to lower the cost of bulk fuel is the formation of cooperatives that are comprised of multiple communities. Consolidation of bulk fuel purchases and the resulting increase in the volume of fuel purchased may lead to a lower delivered cost.

In addition, the increase in fuel costs, even with a volume discount, coupled with increased storage capacity in some communities has lead to the bulk fuel "invoice" amount being an amount such that the current maximum loan amount under AS 42.45.250 (e)(1) requires the borrower to have a larger down payment when cash resources are more scarce.

AEA's Bulk Fuel Revolving Loan Fund currently provides communities with a population of 2,000 or less the opportunity to finance bulk fuel purchases in accordance with AS 42.45.250 and 3 AAC 106.300 – 106.365. Under AS 42.45.250 (e)(1), a borrower is currently limited to a maximum loan of $300,000.

The maximum loan amount of $300,000 to a single borrower precludes a cooperative that may for example be comprised of ten (10) eligible communities, each with a need to purchase $300,000 in fuel, from obtaining a bulk fuel loan of

sufficient size to cover the cost of the bulk fuel purchase. Increasing the loan maximum amount to $650,000 for each applicant under the current eligibility criteria will help alleviate some of the financial challenges faced by the applicants. A higher loan amount means communities needing reduced cash resources to consummate a bulk fuel purchase.

With regard to the increased loan amount of $650,000, AEA expressed reservations as to whether this is the appropriate loan amount and the impact any increased loan amount would have on the Bulk Fuel Revolving Loan Fund without further capitalization of the Fund.

See Appendix F for Financing Bulk Fuel, which provides a list of known existing loan programs for fuel in Alaska.

## Issue: Diesel Powerhouse Efficiency Improvements

**Recommendation #7:** Fund energy efficient generators/automated switchgears
**Rationale:** Reduce powerhouse fuel usage by installing efficient systems
**Action:** Support Denali Commission and advocate for State of Alaska funding to improve rural powerhouses in rural communities
**Funding Required:** $225Kx50 = $11.25M; $100Kx50 = $5M; $140Kx20 = $2.8M

***Background:*** There are three components to reducing fuel usage in rural powerhouses & communities (see Appendix G for Comparison of Recently Installed Energy Systems):
*1. Installation of automatic demand level paralleling switchgear with remote monitoring.* This type of switchgear starts and stops different size generators automatically to match the proper size unit with the load demand of the community. In the past, communities would run a generator large enough to handle the peak loads throughout the day, however, community loads drop down to 50% and some times 25% of the rating of the generator, wasting a significant amount of fuel. The automated switchgear brings a smaller, more fuel efficient generator on line and turns off the larger generator for most of the day and night. The switchgear monitors the load 24 hours a day and does not need an operator on duty to switch generators. The new switchgear continuously monitors the fuel efficiency of each generator and the overall powerhouse fuel consumption. Remote monitoring helps maintain the maximum fuel efficiency and assures that the proper maintenance schedules are followed, extending the overall life of the generators. Cost of the new switchgear for a powerhouse with 3-4 generators rated between 40kW - 500kW is estimated at $150,000 plus installation at about $75,000, for a total cost of $225,000 per site. Estimated saving in fuel: 10%-20% annually.
2. Installation of properly sized generators to meet the load profile of communities. This means installing anywhere from 3 to 4 different size generators in order to be able to run the most efficient unit to match the loads as it changes during the day. Most community loads drop off during the night and pick back up throughout the day and are lower in the summer time as school is out. By installing different size generators, the most fuel efficient generator for the load is selected. This is done using the above mentioned switchgear. Typical cost for new generator equipment is between $25,000 – $75,000 depending on the kW rating need, plus installation cost on $20,000 to $30,000 per unit.
3. Installation of heat recovery systems where economically feasible. The average cost of installing heat recovery in an AEA designed system is between $60,000 - $160,000. Utilization of heat from the powerhouses is limited by the proximity of other facilities that can use the recovered heat. Typically, buildings have to be within 800 feet of the powerhouse. The fuel savings to the communities can run from 5,000 gallon a year up to as high as 25,000 gallons per years.

## Issue: Alternative Energy

**Recommendation #8:** Adopt an aggressive position supporting alternatives

**Recommendation #8a:** Support the application for the In-Stream Project at Eagle and urge early and positive action by the Federal government
**Rationale:** Alternative energy projects potentially competitive with diesel generation
**Action:** Implement policy to support development and construction of alternative energy projects by the Administration and in the legislature
**Funding Required:** Utilize existing programs to further these goals

**Recommendation #8b:** Include alternative routes for the natural gas transportation system to facilitate delivery of propane to markets along the highway at one or more "off-take" sites
**Rationale:** Reduce cost of energy to rural consumers; attract an "anchor tenant" to fund major share of infrastructure; fuel 60 megawatts required to transform Donlin Creek Joint Venture
**Action:** Governor or a State agency remains active in the negotiation process
**Funding Required:** Utilize existing state agency resources

**Recommendation #8c:** Institute a large project permit process to convene a multi-agency state and federal team to accelerate coal resource development
**Rationale:** Coordinate all state and federal permits to ensure that the most efficient and effective strategies are identified to expedite the permitting process
**Action:** Create cabinet subcommittee of DNR, DCCED, DEC and the Attorney General office to oversee and streamline the permitting process for energy projects; inform the public of efforts
**Funding Required:** Utilize existing state agency resources

**Recommendation #8d:** Support the Northwest Alaska Energy Plan
**Recommendation #8e:** Support the study of Beluga Coal Field and Integrated Gasification Combined Cycle technology
**Rationale:** Open other resources with cheap coal-fired energy
**Action:** Encourage industry and stakeholders to develop one of Alaska's largest resources
**Funding Required:** Unknown private resources

**Recommendation #8f:** Establish statewide policy and funding support for deployment of wind-diesel systems
**Recommendation #8g:** Fund large-scale purchase of wind turbine generators, towers, and control systems
**Rationale:** Reduce dependence on diesel fuel; large procurement creates a stable market for system vendors, O&M suppliers, and a critical mass of equipment in the field
**Action:** Funding is required from the State to match other funding sources
**Funding Required:** $3-5 million initial installation

***Background:*** While the overriding energy generation fuel is diesel and will continue to be diesel for the foreseeable future, it is imperative for key executive and legislative leaders to adopt an aggressive position to seek out alternatives that will be competitive in the mid to long term such as gas, coal, wind small hydro, run of the river hydro, biomass, geothermal and perhaps shallow gas.

***Small Natural Gas:*** The Alaska Department of Natural Resources (DNR), Division of Geological and Geophysical Survey and Division of Oil and Gas, and the U.S. Department of Energy Arctic Energy Office should be the lead on small natural gas development issues since they deal with fossil resource exploration and development. AEA can provide input to energy markets and costs. There are a number of applicable reports from Arctic Slope NW Arctic Coal Project, including a delivered coal cost assessment.

***Hydro, Geothermal, and Biomass:*** These are site-specific resources around which AEA maintains programs. Currently we are trying to make our database on existing and potential hydro more accessible to the public through a geographic web interface. Meanwhile, RCA is working on streamlining permitting for small hydro.

The geothermal program is supporting resource assessment in the Akutan and Chena Hot Springs areas, while the biomass program has just completed a statewide solicitation for developing modern wood combustion systems in rural areas. Statements of interest were received from 15 communities--six appear to be promising.

***Nuclear:*** USDOE Arctic Energy Office has been the lead on the Galena project. Currently, the project is in the Nuclear Regulatory Commission process, the most appropriate forum for assessing development issues.

***Coal:*** The Alaska's State Geologist estimates there could be as much as five and a have trillion ton of coal in place in our state (See Appendix H: Summary of Coal Resources of Alaska).

Streamlining the permitting process for large coal projects encourages resource development. It is desirable to tie large projects to local power distribution (as an anchor tenant) when power generation capability supports increased energy supply and reduces costs for local use. Cost of affiliated power distribution and consumption should not be a burden to the anchor tenant.

Northwest Alaska has a huge deposit of Northwest Arctic Coal five miles inland from the Chuckchi Sea that is stranded. The Deadfall Syncline coal deposit contains resources adequate to support a mining operation of one million tons per year for 20 years. The Deadfall Syncline coal is some of the best in the world. It is high in Btu/lb (12,770), low in sulfur (0.2%) and low in moisture

(4.6%). A Northwest Alaska Energy Plan should include a coal power plant to generate power and a transmission line to power the Red Dog Mine. Also, the plan should include a road to transport the mined Arctic coal to tidewater for export. This could also open up to other resources in the NW area with cheap coal-fired power energy.

Emma Creek Energy Project by Usibelli Coal Mine Inc. is a proposal for a $421 million, 200MW power plant at its mine near Healy. Emma Creek coal has 7,200 Btu/lb and sulfur content of 0.2%.

Beluga Coal Field (Beluga) and Integrated Gasification Combined Cycle (IGCC) technology: The main opportunity for DOE Clean Coal funding is IGCC. In Alaska, IGCC would be difficult to justify until it is more proven, considering Alaska's high costs and distances from suppliers. It may, however, be worthwhile doing a Phase II DOE-funded scoping study at Beluga. IGCC may have a lot of benefits at Beluga because of the unique combination of facilities and resources in that location including coal, gas, a fertilizer plant, high voltage transmission lines, gas turbines that will at some point need repowering, nearly depleted oil wells, pipelines, and possibly a coal drying facility. Because an IGCC plant can gasify a wide range of feedstocks and manufacture a wide range of products including electricity, there may be economic development benefits associated with an IGCC plant at Beluga that make the project economic. This combination of resources and facilities all in reasonable proximity and connected by pipeline, may allow IGCC benefits to be optimally exploited.

See Appendix I for more information on Alaska's Coal Resources, a pamphlet designed by the DNR.

***Wind:*** Coastal Alaska includes many communities with excellent wind resources for power generation. Where diesel fueled power generation can be displaced by renewable energy sources like wind or small hydro, villages can save funds by using less fuel. Integrating wind energy into existing diesel systems requires higher upfront capital costs than traditional power plants. Careful assessment of local wind resources must precede development to assure cost-effective projects. See Appendix J for background information on Wind-Diesel Hybrid Systems in Alaska.

The Alaska Rural Energy Plan of 2004 recommends roughly a $30 Million effort over five years towards installing wind-diesel systems in rural communities (see Appendix K: Alaska Rural Energy Plan, Vol. II, Section 3, pages 3-38, 39, 40). This effort consists of three components: Resource Assessment, Final Feasibility/Preliminary Design, and Wind Services Procurement.

## Issue: Energy Conservation

**Recommendation #9:** Adopt an aggressive position supporting energy conservation and power generation efficiency

**Recommendation #9a:** Aggressively pursue cost-effective lighting and heating upgrades in schools and other community facilities statewide
**Rationale:** Quick payback (varies by project)
**Action:** Continued funding of Denali Commission's Village End Use Efficiency Program or similar
**Funding Required:** $3.7 million for 139 communities

**Recommendation #9b:** Replace low efficiency generation units with electronically controlled units and exploit heat recovery alternatives
**Rationale:** Quick payback (varies by project)
**Action:** Install automated switchgear where fuel and labor savings justify cost
**Funding Required:** Varies by location

**Recommendation #9c:** Assess Power Generation and End Use Efficiency Alternatives
**Rationale:** offers support; reports may be used to apply for funding
**Action:** Establish an on-going source of funds to use for audits
**Funding Required:** $15-25,000 per community x 10 = $150,000 - $250,000

**Recommendation #9d:** Fund Energy Star - Energy Smart Program
**Rationale:** Disseminating energy efficiency information saves energy dollars
**Action:** Provide a 3-year grant to RurAL CAP for their program
**Funding Required:** $80K one-time start-up; $300K annual grant x 3 years

**Recommendation #9e:** Create low interest loans for energy efficient projects for community buildings, schools, businesses and residences.
**Rationale:** Provides businesses and communities the boost needed; quick payback helps pay off loan.
**Action:** Create a low interest loan fund for energy efficient projects.
**Funding Required:** similar to the Bulk Fuel Revolving loan fund.

**Recommendation #9f:** Fund Alaska Housing Finance Corporation (AHFC) Weatherization program at previous level of $6.5 Million
**Rationale:** Weatherization ensures safety and health.
**Action:** Fund weatherization at previous level ($6.5 Million)
**Funding Required:** $6.5 Million

**Recommendation #9g:** Review Design Engineering for Water & Sewer Construction.
**Rationale:** construction practices for water and sewer exacerbate the energy challenges by improperly designed heat trace that increase cost with no to little beneficial consumer use.
**Action:** Review Design Engineering for Water & Sewer Construction.
**Funding Required:** AEA staff funded through several U. S. Department of Energy programs would be able to provide an engineering review.

***Background:*** The 2004 Energy Policy Task Force reported that efforts to use energy resources more efficiently can reduce energy costs and benefit the environment. Energy efficiency is broader than simple energy conservation, or eliminating unnecessary energy use. Efficiency involves achieving necessary goals, while minimizing energy requirements. Efficiency should not compromise comfort, performance, or productivity, but rather meet those requirements through more proficient means.

We recognize that in the short period since the Energy Policy Task Force made their findings and recommendations, the price of oil has surpassed $50 per barrel during the spring of 2005. This is resulting in an increase to most Rural Alaska villages of 30 to 40% for fuel oil and gas.

In recent weeks, against a backdrop of huge spikes of per barrel costs and OPEC decision to reduce production, the Chairman of one of America's largest oil companies said the least painful way to deal with this is CONSERVATION. Prices are higher, so there's added incentive to be energy efficient.

***Energy Star – Energy Smart:*** The activities included in such a figure involves lighting, some level of appliance replacement and also the day-tank issue. See Appendix L for details about the RurAL CAP Energy Star – Energy Smart Program.

## Issue: Low Income Home Energy Assistance Program (LIHEAP)

**Recommendation #10:** Publish a guide on financing & buying enough home heating fuel
**Rationale:** Effective and timely use of LIHEAP funding; ordering enough fuel during barge delivery; ensure availability of adequate storage containers for the community and homes
**Action:** AEA & LIHEAP collaborate to identify financing options to upgrade home energy sources/supplies (tanks, generators, water tanks, etc.), create a resource list of fuel distributors
**Funding Required:** $150,000 - $250,000

***Background:*** The State of Alaska has two major energy assistance programs for Alaskans: PCE with an annual budget of $15.7 million, and LIHEAP with approximately $6.0 Million per year through the State Department of Health and Social Services and approximately $3.0 million through the Regional Non Profit Corporations.

- While the PCE program reimburses Utilities for PCE credit applied to customer bills, the LIHEAP program makes direct payment to the income eligible individuals to assist with their heating bill.
- While the state budget benefits from high oil prices, many individual low-income households struggle to pay for their home heating oil.
- In some communities, insufficient bulk fuel storage prevents the community from acquiring enough fuel to last through the winter. Communities expect LIHEAP to make late summer eligibility determinations, so individual residential tanks can be filled to ensure enough supply for the winter. These requests precede: the LIHEAP federal funding level, beginning of the October 1 federal fiscal year, and the beginning of LIHEAP season. Bush Alaska transportation schedules do not necessarily match program funding patterns.
- Problems with low river levels hamper barge fuel delivery. Certain residents expect LIHEAP to make late summer eligibility determinations. Consumers need ways to increase capacity and get more fuel delivered and stored earlier in the summer during high water levels.
- Communities with credit issues are limited in their ability to get bulk fuel loans, so they want LIHEAP to commit to a specified subsidy amount for the village. As eligibility is household based and the new federal budget is unknown, this is not possible. However, LIHEAP may provide previous year estimates.
- Energy efficiency improvements, such as replacing leaky 55 gallon drum household storage containers, replacing old heaters with high efficiency models, or replacing electric hot water heaters with high efficiency on-demand models can help individuals and the entire community reduce energy demands.

## Issue: Energy Funding for School Districts

**Recommendation #11:** Separate energy related expenses from education foundation formula
**Rationale:** Dedicating education funding on classroom activities may improve education measurement scores
**Action:** Advocate for the creation of a new funding method to support energy costs separate from the education foundation formula
**Funding Required:** Unknown

***Background:*** There may be a direct link between energy costs and student achievement. "A school district may spend as much as 23% of its total operating fund budget on energy. Budget shares equaling such a large portion of the total operating fund require a separate analysis when creating a cost-of-education index." (Bradford Tuck, A Review of Alaska School District Cost Study, January 2004)

As Alaskans, predominantly rural areas, experience increase in fuel costs, school districts are allocating more money for energy at the expense of our students across the state who are not doing well in their education measurement scores. More and more of the foundation formula dollars go to energy related expenses, depriving resources for classroom expenses, teacher salary and benefits, and other direct education mission costs. As a result, some districts experience up to 45% turnover rates of its educators. The School Districts need to have a separate budget for heating and lighting of the schools across the state.

Governor Murkowski, in his State of the State Address in 2005, quoted two rural leaders for mentioning that "the high cost energy is a major obstacle to a healthy and robust rural economy. They said many villages pay more than $5.00 a gallon for gasoline, $5.00 a gallon for heating fuel, and up to 50 cents a kwh for their electricity. Many rural Alaskans are moving into hub communities because they cannot afford the high cost of heating fuel, gasoline, and electricity. This is to the detriment of keeping village schools open and building rural and village economies." If high energy expenses may be jeopardizing the very existence of rural schools, then Alaskan need to assess ways to ensure that the doors to school facilities remain open for years to come.

## Issue: Rural Energy Centers

**Recommendation #12:** Establish Rural Energy Centers at the University of Alaska (U of A) Rural Campuses or other equally equipped venue within the U of A
**Rationale:** Decentralize research and development efforts relating to energy
**Action:** Collaborate with the University of Alaska to develop plans, etc.
**Funding Required:** Unknown

***Background:*** The purpose of the centers is to decentralize all research and development of conservation, oil and gas development initiatives, and alternatives that will reduce use of diesel in regions across the state. Presently, if people need useful energy information, they must access it at urban-based central organizations in Anchorage, Fairbanks or Juneau. Rural schools and the general public needs readily available access to new ideas, new wind energy generators, more efficient use of current diesel generators, conservation, and the use of coal and other alternatives to diesel.

The Governor and his administration would work with the Denali Commission and the University of Alaska to get these energy centers set up by working with the Rural Campuses to find the best way to establish this program.

# Staff Recognition

As a principal staff to the Rural Energy Action Council, I wish to acknowledge all Alaska Energy Authority (AEA) Rural Energy Group staff and Alaska Industrial Development & Export Authority (AIDEA) staff who contributed to this report.

Peter Crimp
Sara Fisher-Goad
Rebecca Garrett
Becky Gay
Terri Harper
Jolene John
Lenny Landis
Reuben Loewen
Jim McMillan
Chris Mello
Monica Moore
Kris Noonan
Bernie Smith
Bruce Tiedeman
Sue Weimer

Additionally, I want to recognize Al Clough, Deputy Commissioner of the Alaska Department of Commerce, Community and Economic Development (DCCED) for all his support. From the Denali Commission, I want to thank Al Ewing, Executive Director, Cindy Roberts, Program Manager/Liaison from DCCED, and Rayna Swanson, Liaison from RurAL CAP/Assistant to the Energy Program Manager, for their valuable insights on the programs for rural energy that the Denali Commission administers.

Mike Harper
Deputy Director – Rural Energy Group

## Acknowledgements

Bernice Joseph, Dean of the College of Rural Alaska, University of Alaska Fairbanks, Alaska

Bill Griffith, Acting Village Safe Water Engineer, Department of Environmental Conservation, Village Safe Water, Anchorage, Alaska

Brad Reeve, Manager, Kotzebue Electric Association, Kotzebue, Alaska
Brian Connors, Community Development Division Director, RurAL CAP, Inc., Anchorage, Alaska

Bruce Buzby, Geologist, Alaska Department of Natural Resources, Anchorage, Alaska

Dave Jensen, The Aleut Corporation

Del Conrad, Executive Director, Rural Alaska Fuel Services, Inc., Anchorage, Alaska

Henry Strub, Board Director, Nushagak Electric & Telephone Cooperative, Dillingham, Alaska

Mark Foster, Principal, Mark A. Foster & Associates (MAFA), Anchorage, Alaska

Mary Riggen-Ver, Program Coordinator, Department of Health and Social Services, Division of Public Assistance, Juneau, Alaska

Meera Kohler, President & CEO, Alaska Village Electric Cooperative, Anchorage, Alaska

Scott Goldsmith, Economics Professor, University of Alaska Anchorage, Institute of Social and Economic Research (ISER), Anchorage, Alaska

Scott Waterman, Energy Program Management, Alaska Housing Finance Corporation, Anchorage, Alaska

Shaen Tarter, Vice President, Yukon Fuel Company, Anchorage, Alaska
The Denali Commission

Wallace Robertson, Seattle Support Center "Alaska Resupply Operation", Bureau of Indian Affairs, Seattle, Washington

# Acronyms

| | |
|---|---|
| AAC | Alaska Administrative Code |
| AEA | Alaska Energy Authority |
| AFN | Alaska Federation of Natives |
| AHFC | Alaska Housing Finance Corporation |
| AIDEA | Alaska Industrial Development & Export Authority |
| AITC | Alaska Inter-Tribal Council |
| AML | Alaska Municipal League |
| AML-JIA | Alaska Municipal League – Joint Insurance Arrangements |
| AS | Alaska Statute |
| ATC | Alaska Technical Center |
| AVEC | Alaska Village Electric Cooperative |
| AVTEC | Alaska Vocational Technical Center |
| BFRLF | Bulk Fuel Revolving Loan Fund |
| BFU | Bulk Fuel Upgrade Program |
| BIA | Bureau of Indian Affairs |
| Btu | British thermal unit |
| CRA | Community and Regional Affairs (a legislative committee) |
| CS | Committee Substitute |
| DCCED | Department of Commerce, Community & Economic Development |
| DEC | Department of Environmental Conservation |
| DOD | Department of Defense |
| DOE | Department of Energy |
| DNR | Department of Natural Resources |
| EPTF | Alaska Energy Policy Task Force |
| HB | House Bill |
| HVAC | Heating, Ventilation and Air Conditioning |
| IGCC | Integrated Gasification Combined Cycle |
| K | Thousand |
| kW | Kilowatt |
| kWH | Kilowatt Hour |
| LIHEAP | Low Income Home Energy Assistance Program |
| lp | pound |
| M | Million |
| MW | Megawatt |
| Non-PCE | Communities not participating in the Power Cost Equalization Program |
| NW | Northwest |
| O&M | Operations and Maintenance |
| OPEC | Organization of the Petroleum Exporting Countries |
| BIA | Bureau of Indian Affairs |
| PCE | Power Cost Equalization program |
| R&R | Repair and Replacement |
| RAFS | Rural Alaska Fuel Services, Incorporated |
| RCA | Regulatory Commission of Alaska |
| REAC | Rural Energy Action Council |
| RPSU | Rural Power System Upgrade Program |
| RurAL CAP | Rural Alaska Community Action Program, Inc. |
| SAVEC | Southwest Alaska Vocational Educational Center |
| SLA | Session Laws of Alaska |
| USDA | United States Department of Agriculture |
| USDOE | United States Department of Energy |
| WAVE | Western Alaska Village Enterprises |

# Appendices

## Appendix A: PCE Blue Ribbon Committee Executive Summary (1999)

INTRODUCTION

The Power Cost Equalization program has paid a portion of the electrical bills of rural consumers since 1985. During this period, the PCE budget has averaged about $17.5 million per year. In 1993, the State legislature established a Power Cost Equalization and Rural Electric Capitalization Fund (the "PCE Fund") with an appropriation of $66.9 million, and also enacted the following policy statement:

> Ch. 18, SLA 1993, Sec. 1. "FINDINGS AND INTENT. (a) The legislature finds that adequate, reliable, electric service at affordable rates is a necessary ingredient of a modern society and a prosperous developing economy. The legislature further finds at the current stage of social and economic development in the state, direct participation by the state is necessary to assist in the development of a regional electric transmission infrastructure and to assist in holding rates in high cost service areas to affordable levels.
>
> (b) The legislature recognizes the high cost of electric power in rural Alaska and intends that funding for power cost equalization from the general fund and from the power cost equalization and rural electric capitalization fund remain at a minimum of $17,000,000 annually through the year 2013. The legislature further intends that this long-term commitment to the power cost equalization program will permit and encourage the electric utility industry and its lenders to develop the plans, make the investments, and take other actions that are necessary or prudent to meet the utility needs of residents in rural Alaska."

Over the last several years, PCE outlays have been drawn exclusively from the PCE Fund, which will be nearly exhausted by the end of FY99. For PCE to continue beyond FY99, a renewed commitment will be needed by the 1999 legislature and by the Governor.

In anticipation of this pivotal legislative session, the Governor convened a Blue Ribbon Committee to consider and recommend an overall policy on the future of PCE as well as specific proposals to implement that policy. The Committee membership was designed to reflect a variety of institutional perspectives by including members from the legislature, the public utilities commission, the Anchorage chamber of commerce, rural consumers, rural utilities, and the State's industrial development agency. The Committee membership (in alphabetical order) is as follows:

Blue Ribbon Committee Membership

The Honorable Al Adams
Alaska State Senator

Mr. Robert Beans, Chairman
Alaska Village Electric Cooperative, Inc.

Mr. Sam Cotten, Chairman
Alaska Public Utilities Commission

Mr. Joe Griffith, Chairman
Anchorage Chamber of Commerce

Ms. Nancy James
Consumer representative from Ft. Yukon

Mr. Robert Martin Jr., (former) General Manager
Tlingit & Haida Regional Electrical Authority

The Honorable Drue Pearce
Alaska State Senator

Mr. Walter Sapp, representative
Four Dam Pool Project Management Committee

Mr. Randy Simmons, Executive Director
Alaska Industrial Development and Export Authority

Mr. Dewey Skan, President
Rural Alaska Community Action Program, Inc.

Mr. Eric Yould, Executive Director
Alaska Rural Electric Cooperative Association, Inc.

Beginning in January 1998, the Committee reviewed the history, structure, and impact of PCE, the organizational and cost structure of rural electric utilities, and proposals that have been made to reduce rural power costs. The Committee then returned to the task of developing policy and program recommendations with respect to the PCE program.

SUMMARY OF RECOMMENDATIONS

The Committee has adopted the following recommendations:

1. PCE or an alternative rate support program for high cost service areas should be extended into the future.

2. Such rate support should be available only for:

   A. A "lifeline" supply of electric power for residential consumers. A lifeline supply is defined as one-half of the statewide average consumption per household each month. While this amount varies over the course of a year, the average monthly lifeline supply would be approximately 350 kWh.

   B. Electric power for community facilities that are directly related to public health and safety.

3. A stable source of funding for PCE or an alternative rate support program should be established with the following major components:

   A. 60% of the annual debt service paid to the State by the Four Dam Pool – this would include the 40% now allocated to PCE plus the 20% now allocated to the Power Project Fund loan program.

   B. $20 million appropriated by the 1993 legislature as a loan for the Swan/Tyee intertie, based on a proposal from Ketchikan Public Utilities to forego the loan in exchange for State bonding of Swan/Tyee intertie costs.

   C. Proceeds of a universal service fund to be created from a surcharge on all electricity sold statewide by public utilities.

4. A statewide organization or agency should be designated to establish standards for rural electric utilities with respect to financial management, physical plant, and system operations. No rural electric utility should continue to receive rate support or capital project grants from the State unless it is in compliance with these standards, is making clear and continuing progress in attaining compliance, or has entered into an agreement with an existing utility or utility organization whose operation is consistent with the standards.

All Committee members recognize the challenge in gaining a consensus on future program funding as well as the amount of future benefits. For this reason, several options are presented in this report for consideration by the Governor and the legislature:

OPTION 1: Universal service fund.

- 1A. A lifeline supply of power is made available at 150% of the statewide average residential rate. (The 150% level is estimated at 17.0 cents per kWh.)
- 1B. Same as 1A except the lifeline rate is set at 100% of the statewide average residential rate. (The 100% level is estimated at 11.3 cents per kWh.)

OPTION 2: General Fund endowment / extend modified PCE through 2013.

OPTION 3: Declining general fund appropriations / extend modified PCE through 2010.

OPTION 4: Further explore the potential for federal funding of PCE or an alternative rate support program.

The potential funding options were debated at length by the Committee and ultimately put to a vote. Included in Attachment 1 are the questions included on the Committee ballot and the ballot results. Key results are as follows:

- A majority of Committee members recommend the creation of a universal service fund to provide limited rate relief in high cost service areas.
- Of the 7 members favoring a universal service fund, a majority would set the lifeline rate at 150% of the statewide average residential rate.
- Each of the options listed above is believed by a majority of the Committee members to be worthy of further consideration by the Governor and legislature.

## Appendix B: Tabled PCE Recommendations

**Recommendation # :** Allow return on equity as an eligible cost for reimbursement
**Rationale:** Improve efficiency incentives for utilities and consumers
**Action:** Change PCE Regulations
**Funding Required:** $

**Recommendation # :** Increase residential customer kWh monthly limits
**Rationale:** Improve efficiency incentives for utilities and consumers
**Action:** Change PCE regulations to increase kWh's eligible and reduce percentage of (ceiling-floor) cost
**Funding Required:** $

**Recommendation # :** Adjust cost reimbursement formula into a fuel / non-fuel component
**Rationale:** Improve efficiency incentives for utilities and consumers; offset the highly volatile cost of diesel fuel
**Action:** Change regulations to allow reimbursement of a high percentage of fuel cost compared to non-fuel cost
**Funding Required:** $

# Appendix C: Rural Alaska Fuel Services, Inc.

## Rural Alaska Fuel Services

*Mission Statement*

*"To provide bulk fuel tank farm services in rural Alaska in such a manner as to achieve sustainability and meet all state and federal regulatory requirements."*

**SCOPE OF SERVICES**

RAFS:

Rural Alaska Fuel Services is a not-for-profit corporation organized to contract for the operation and maintenance of rural Alaskan bulk fuel storage facilities constructed by the Denali Commission and granted to selected communities. A condition of the Denali Commission grants is that the newly constructed tank farms be maintained and operated in accordance with all applicable state and federal regulations.

RAFS provides an alternative means of managing and safely operating rural tank farms, brings economies of scale and expertise to tank farm operations not usually available to individual communities, and ensures compliance with local, state and federal regulations, laws and standards.

RAFS offers communities, village corporations, school districts and electric power generation cooperatives a means to achieve the Denali Commission's goals of economic advantage, regulatory compliance and long term sustainability of rural bulk fuel storage facilities operating requirements.

**1. Bulk Fuel Storage Facility Management and Administration**

1.1. Oversee all affairs related to operating the bulk fuel storage facility.

1.2. Hire and supervise tank farm operating staff.

1.3. Maintain all facility records.

1.4. Provide tank farm accounting and financial services.

1.5. Manage the Renewal and Replacement Fund.

1.6. Prepare operations and maintenance budgets.

1.7. Prepare operations and maintenance manuals.

1.8. Maintain Spill Preparedness and Countermeasures Contingency Plans.

1.9. Provide initial spill response services.

1.10. Contract for Tier II spill response services.

1.11. Manage bulk fuel storage facility inventory.

1.12. Liaison with government and regulatory agencies.

1.13. Prepare and submit necessary reports and documents.

2. **Bulk Fuel Storage Facility Operations**
   - 2.1. Inventory current tank levels.
   - 2.2. Unload fuel shipments from fuel barges and transfer to tank farm.
   - 2.3. Unload fuel shipments from aircraft and transfer to tank farm.
   - 2.4. Fill intermediate tanks as required.
   - 2.5. Dispense fuel to individual stakeholders.
   - 2.6. Provide regulatory training.
   - 2.7. Provide facility operations and maintenance training.
   - 2.8. Accomplish fuel testing protocols and maintain records.
   - 2.9. Conduct environmental oversight of the facility.
   - 2.10. Maintain facility security.
   - 2.11. Prepare and submit necessary reports and documents.

3. **Bulk Fuel Storage Facility Maintenance**
   - 3.1. Maintain maintenance and inspection logs and schedules.
   - 3.2. Test and inspect fuel pipelines.
   - 3.3. Test and inspect fuel storage tanks.
   - 3.4. Test, inspect and service fuel handling pumps and valves.
   - 3.5. Test, inspect and service marine headers and hoses.
   - 3.6. Conduct secondary containment inspection and maintenance.
   - 3.7. Conduct preventative maintenance tasks as scheduled.
   - 3.8. Accomplish equipment repairs, including replacement, when necessary.
   - 3.9. Clean storage tanks as required.
   - 3.10. Prepare and submit necessary reports and documents.

# Appendix D: Sample of the Price of Fuel

**Sample Price of Fuel in Rural Alaska**
Spring 2005

| | | Rate Charged Per Gallon | |
|---|---|---|---|
| | | Utility or School | Private or Community Vendor |
| Price at Seattle - OPIS | | $ 2.00 | $ 2.00 |
| Transportation | | $ 0.55 | $ 1.28 |
| Landed Cost | | **$ 2.55** | **$ 3.28** |
| Operation and Maintenance | | | |
| Insurance | $0.10 - 0.30 | | |
| Billing, Collections | $ 0.05 | | |
| Inspection, Pressure Testing | $ 0.02 | | |
| Training, Audit | $ 0.02 | | |
| Delivery | $ 0.05 | | |
| City Tax | $ 0.02 | | |
| | $0.26 - 0.46 | $ 0.26 | $ 0.46 |
| Interest on Loan | | $ 0.05 | $ 0.15 |
| Repair and Replacement | | $ 0.15 | $ 0.15 |
| Profit | | $ 0.10 | $ 0.50 |
| **Total Cost to User or Consumer** | | **$ 3.11** | **$ 4.54** |
| | | per gallon | per gallon |

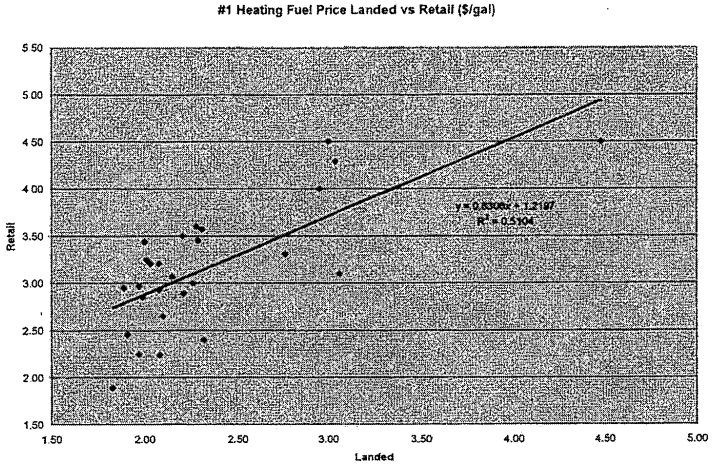
*Assumptions:*

*Utility/School is member of large discount buying fuel cooperative within close proximity of supply, has adequate storage, orders large volumes, enjoys quick pump time and has favorable credit.*
*Private vendor has few factors as named above.*
*Utility/School enjoys favorable interest rate (5%); vendor must pay (15%)*
*Both operate tank farm in business like fashion*
*Both set aside minimum amount for repair and replacement.*
*Vendor seeks larger profit.*

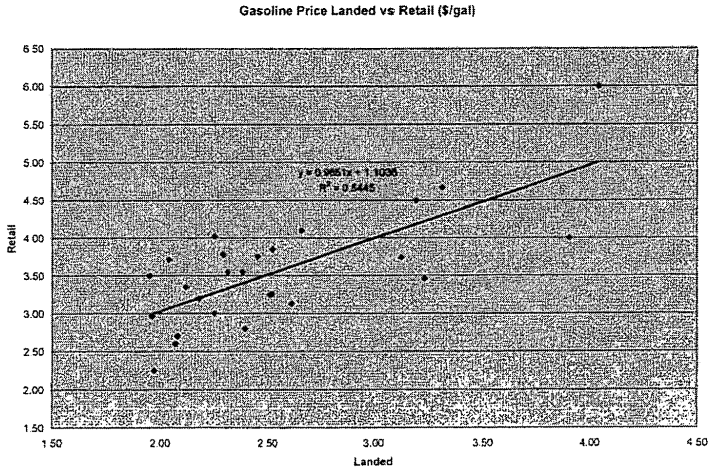
# Appendix E: AEA Energy Fuel Survey (February 2005)

## Landed vs Retail Fuel Costs

P. Crimp and M. Moore, AEA 4-05




Retail = 0.8306 * Landed + 1.2197
R2 = 0.5104




Retail = 0.9651 * Landed + 1.1036
R2 = 0.5445

## Appendix F: Financing Bulk Fuel

During the course of investigating various options for financing Bulk Fuel purchases for rural Alaska communities, it became apparent quickly that there are limited options:

I. **Bulk Fuel Revolving Loan Fund:**
State of Alaska, Alaska Energy Authority: Program provides loans to assist communities with populations under 2,000 for purchasing bulk fuel oil. Eligibility: municipalities, native corporations, non-profit corporations, community organizations, unincorporated villages, and traditional councils. Limited to $300,000 per borrower and not to exceed 90% of price with interest rate of zero for first loan and 5 % thereafter. Term is 9 months.
Contact: Sue Weimer, AEA, (907) 269-3000.

II. **Bulk Fuel Bridge Loan Program:**
State of Alaska, Created by the Governor's Office and administered by the Department of Commerce, Community and Economic Development: if you cannot receive a loan under established programs, than this program may be available. Initially created as an emergency program until February 2007. Terms approximately the same as the terms and conditions of the state Bulk Fuel Revolving Loan Program.
Contact: Al Clough, DCCED, (907) 269-2500.

III. **Alaska Resupply Operation:**
Federal Bureau of Indian Affairs, Seattle Support Center: Provides affordable transportation and service costs to the natives of Alaska, for the resupply of life-sustaining goods on a limited basis. This will enhance the economies of individuals, tribes, and cooperatives in their locale. Program originated in 1893 with US Coast Guard providing ships that carried goods to villages of Alaska seacoast. BIA ships made delivery up until 1984. At this time, Department of Defense administers the limited program.
Contact: Wallace Robertson, (206) 764-3328.

IV. **Native American Bank**
Commercial Bank, owned by Native Americans including Alaska Native Group(s) seeks to assist with financing of Bulk Fuel for rural Alaskan Villages: This bank is working with Native Organizations in effort to utilize Federal Bureau of Indian Affairs program.
Contact: Marvin Addams, (907) 646-1212

## Appendix G: Comparison of Recently Installed Energy Systems

**AEA Performance Metrics, Sample RPSU and End Use Efficiency Projects**
Compiled 2/1/05, P Crimp

**Rural Power System Upgrade Projects**

| | Golovin | Kokhanok | Kotlik | Total |
|---|---|---|---|---|
| Old Gen Efficiency, kWh/gal | 11.69 | 8.33 | 11.39 | |
| New Gen efficiency, kWh/gal | 13.00 | 13.21 | 12.75 | |
| | 11% | 59% | 12% | |
| FY04 generation, kWh | 736,244 | 348,815 | 1,972,932 | |
| Gen fuel saving, gal/yr | 6,347 | 15,452 | 18,476 | 40,275 |
| FY02 fuel price, $/gal | $ 1.50 | $ 2.36 | $ 1.62 | |
| Gen fuel cost saving/yr | $ 9,520 | $ 36,468 | $ 29,932 | $ 75,919 |
| Additional Heat Recovery, gal | 5,000 | 4,000 | 25,000 | 34,000 |
| Heating Fuel Price, $/gal | $ 3.00 | $ 3.00 | $ 3.00 | |
| Heating fuel cost saving/yr | $ 15,000 | $ 12,000 | $ 75,000 | $ 102,000 |
| Total Fuel Cost Savings/yr | $ 24,520 | $ 48,468 | $ 104,932 | $ 177,919 |

| | Golovin RPSU | Kokhanok RPSU | Kotlik RPSU | Community Lighting Upgrades |
|---|---|---|---|---|
| Power Generation | $ 9,520 | $ 36,468 | $ 29,932 | $ 9,114 |
| Heating | $ 15,000 | $ 12,000 | $ 75,000 | |
| | $ 24,520 | $ 48,468 | $ 104,932 | $ 9,114 |

**Lighting Upgrade Demonstration Projects**
(Aniak, Chuathbaluk, Kotzebue, and McGrath school buildings)

| | |
|---|---|
| Total energy savings, kWh | 124,227 |
| Efficiency gain over pre-project | 13% |
| Retail power cost savings/yr | $ 41,603 |
| Gen fuel saving, gal/yr | 9,114 |
| Gen fuel cost saving/yr | $ 12,257 |

# Appendix H: Summary of Coal Resources of Alaska

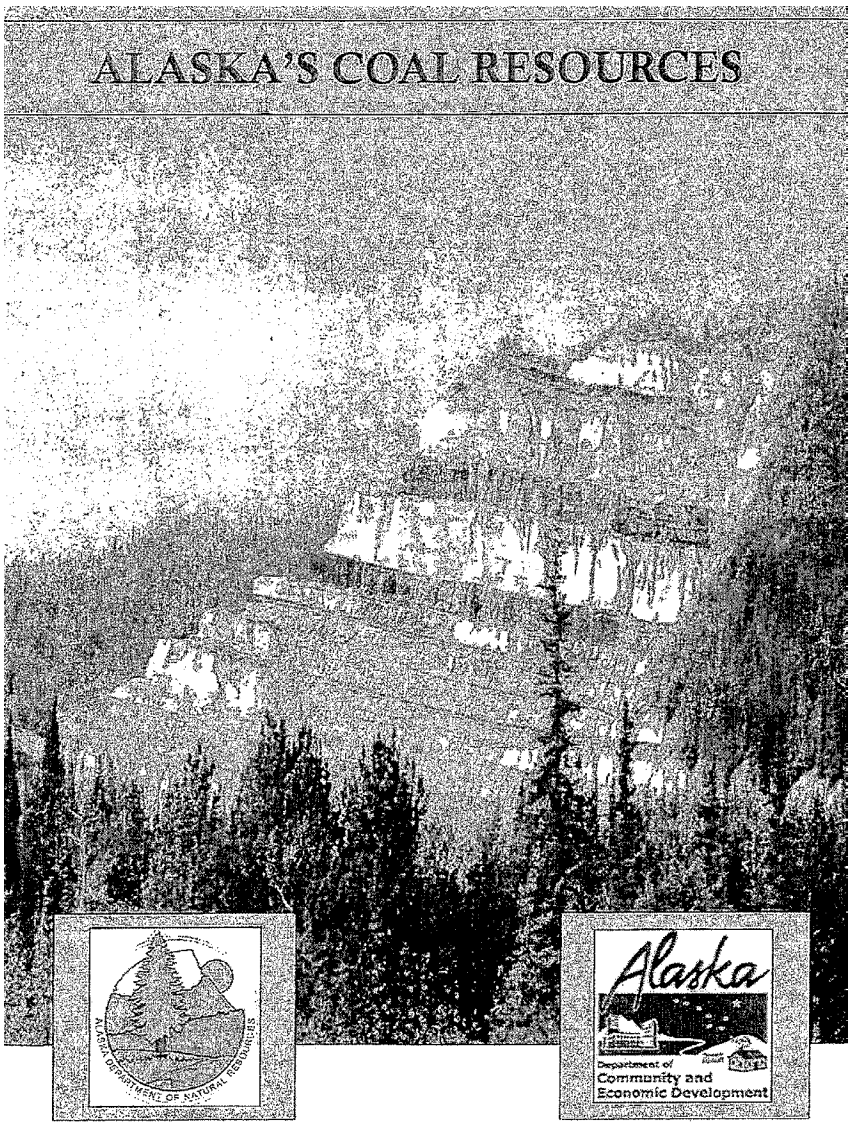
## ALASKA'S COAL RESOURCE: HOW MUCH IS THERE?

Alaska's coal basins contain a vast amount of coal, perhaps more than half as much coal as currently inferred for the rest of the United States. The following table, prepared by Alaska's State Geologist in 1983, indicates where the main coal regions are located and the best estimate of the upper range of coal those basins contain.

TABLE 2-2. SUMMARY OF THE COAL RESOURCES OF ALASKA (in short tons).

| Region | Identified Resources | Undiscovered Resources |
|---|---|---|
| Northern Alaska | 150 billion | to 4 trillion |
| Cook Inlet-Susitna lowland | 11 billion | over 1.6 trillion |
| a. Beluga and Yentna fields | 10 billion | to 30 billion |
| b. Kenai field (including offshore deposits) | 300 million | to 100 billion[a] to 1.5 trillion[b] |
| c. Matanuska field | 100 million | to 500 million |
| d. Broad Pass field | 50 million | to 500 million |
| Nenana trend | 7 billion | to 10 billion |
| Jarvis Creek field | 75 million | to 175 million |
| Other interior coal occurrences | | to 3 billion |
| Bering River field | 75 million | to 3.5 billion |
| Chignik Bay-Herendeen Bay fields | 200 million | to 3 billion |
| | over 160 billion | over 5.5 trillion |

[a]To 2,000-foot depth. [b]To 10,000-foot depth.


ALASKA'S COAL RESOURCES
ALASKA DEPARTMENT OF NATURAL RESOURCES
Alaska
Department of
Community and
Economic Development

## Appendix I: Alaska's Coal Resources

# COAL RESOURCES AND RESERVES

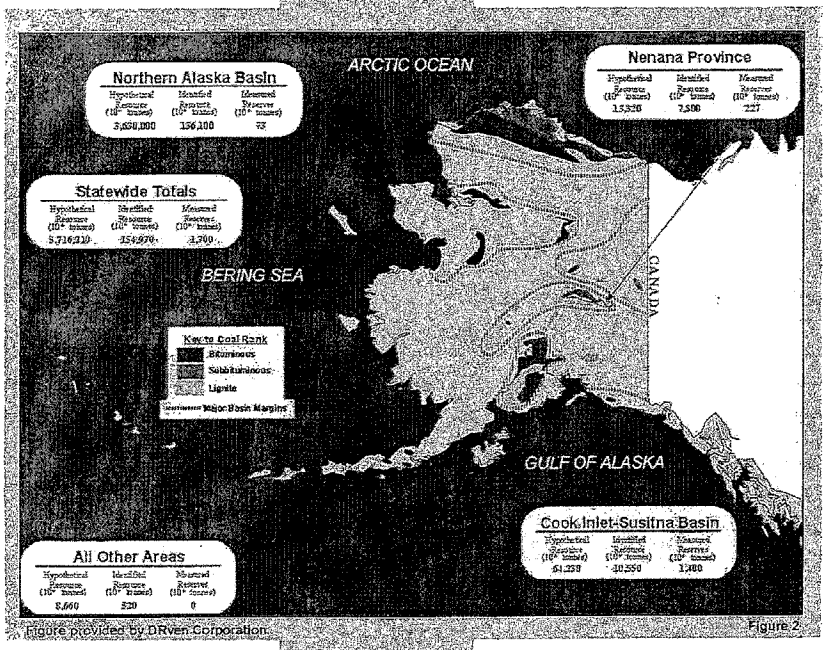
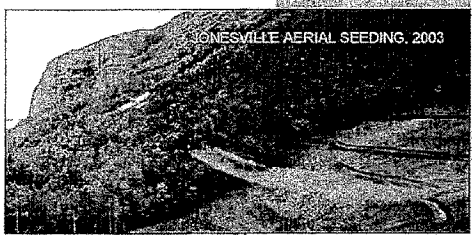



Figure provided by DRven Corporation

Figure 2



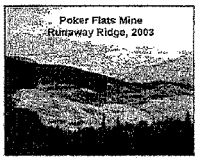

Contents of this pamphlet compiled by staff of the State of Alaska, Department of Natural Resources, 2004.

Photo credits: DNR - Mining Section staff.

# ALASKA'S COAL RESOURCES

Alaska is host to some of the most extensive coal resources in the world. Total hypothetical coal resources in Alaska exceed 5.5 trillion short tons, equal to about half the estimated coal resources of the United States. Alaska coals are mainly bituminous and sub bituminous and of Cretaceous to Tertiary age.

Coal is widely distributed in Alaska Geologic formations that underlie about 9 percent of the state's land area. Major coal deposits occur in the Northern Alaska, Nenana, and Cook Inlet - Susitna provinces. The Nenana and Cook Inlet - Susitna provinces are economically important because of their proximity to the Alaska Railroad and the proximity of the Cook Inlet - Susitna province to tidewater. Alaska's coal resources are sufficient for domestic use and export for at least the next century and probably for two or three centuries based on current consumption rates.



Poker Flats Mine
Runaway Ridge, 2003

Most of Alaska coals contain less than 0.5 percent sulfur. In addition, they often have good ash-fusion characteristics and low metallic trace-element and nitrogen contents.

Although coal was undoubtedly used by native Alaskans before its discovery by Russian explorers in 1786, the first documented coal production occurred in 1855. Subsequent small-scale mining was common at numerous sites throughout the state. Before 1900, coal was used to fuel river steamboats and provide power for placer gold mines and canneries. In 1917, the Alaska Railroad provided access to the Matanuska field in southcentral Alaska with over 250,000 short tons of coal mined that year.

Since World War I, over 20 million short tons of coal have been mined in the Healy Creek and Hosanna Creek fields and production in the Matanuska field has exceeded 7 Million short tons. Before World War II, underground coal mining was dominant, but a combination of underground and surface mining was common from 1943 until the early 1960's. Recent production has been entirely by surface mining. Alaska's coal production peaked at about 1.5 million short tons in 2001.

Alaska coal is amenable to surface mining by dragline or truck-and-shovel methods. Rail costs from the Matanuska and Hosanna Creek fields to the port of Seward vary from $6 to $11/short ton, depending on distance. Coal loading costs at the port of Seward range from $4 to $5/short ton. Therefore, total rail transportation plus ship loading costs vary from $9 to $16/short ton. With increased volumes of coal, these costs could decline significantly.

Relative ocean-transport steaming time for Alaska coal compares favorably with other export coals in the Pacific Rim (fig.1). On the basis of handling and combustion characteristics, inherent low sulfur and nitrogen contents, and total dollar cost per Btu, Alaska coal can compete in the Pacific Rim market.

## COAL PROVINCES OF ALASKA

Most coal resources of Alaska occur in regions that are defined geologically or geographically as provinces. These coal provinces are divided into sub provinces, basins, fields, districts, and occurrences. This hierarchy provides a general framework for categorizing all coal deposits in Alaska:

- Coal province - An extensive area that contains similar coal-bearing rocks.
- Coal sub province - A relatively large area that forms a contiguous part of a coal province.
- Coal basin - An area that contains one or more coal fields or that forms a distinct part of a province.
- Coal field - An area that has high resource potential and contains one or more known coal beds of mineable thickness.
- Coal district - An area that forms part of a coal field or an isolated area that has less probable resource potential than a coal field.
- Coal occurrence - A site where one or more typically thin, discontinuous coal beds crop out.

Eight coal provinces are recognized in Alaska; of these, three - Northern Alaska, Cook Inlet - Susitna, and Nenana - contain most of the identified and hypothetical coal resources in the state. The remainder - Alaska Peninsula, Gulf of Alaska, Yukon - Koyukuk, Upper Yukon, and Seward Peninsula-have had historic production, contain some identified resources, and show potential for more discoveries. The magnitude of economic coal resources in the latter provinces is unknown.

Other coal deposits occur outside the recognized provinces. These include the Copper River field and associated districts, southwest Alaska (Yukon-Kuskokwim region), southeast Alaska, and Kodiak-Trinity Islands. In addition, several areas that contain coal of uncertain quality and quantity have been denoted on the map as prospective coal basins (fig. 2).

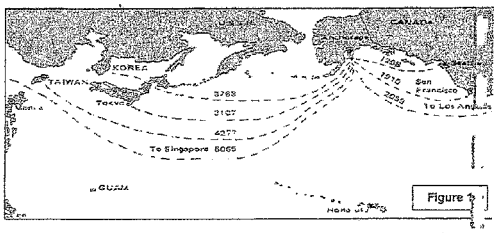



Figure 1

ALASKA COAL

| PROVINCE | LOCATION | Btu/lb | RANK | U |
|---|---|---|---|---|
| Cook Inlet - Susitna | Matanuska | 10,400 to 13,200 | Bituminous | 0.2% |
| Cook Inlet - Susitna | Beluga | 7,600 to 8,000 | Subituminous | = |
| Northern Alaska | Cape Beaufort | 9,100 to 12,700 | Bituminous | 0.2 |
| Northern Alaska | Deadfall Syncline | 10,900 to 13,200 | Bituminous | 2 |
| Nenana | Healy | 7,800 | Subituminous | 0 |

## COAL MINING ACTIVITES AND COAL EXPLORATION IN ALASKA

- The Nenana Coal Field is currently the only active coal producing field in the State of Alaska.
  Usibelli Coal Mine holds four active permits in this field: Poker Flats, Gold Run Pass, Two Bull Ridge and Roselie. They produce on average 1,200,000 tons of coal per year. A majority of their production is consumed by Alaskan markets, however, they also provide roughly 400,000 tons per year to overseas markets.
  Usibelli Coal Mine also holds two exploration permits in this field; Hoseanna/Emma Creek and Healy Valley exploration permits.
- The Matanuska Coal Field is home to three exploration permits, with identified reserves at 150 million tons.
  The Wishbone Hill exploration permit is owned by Usibelli Coal Mine.
  Jonesville Mine exploration is owned by Knoll Acres Associates.
  Hobbs Industries holds the Castle Mountain exploration permit.
- The Beluga Coal Field, in the Cook Inlet – Susitna coal province, has two active exploration permits, with identified and proven reserves of approximately 2 billion tons.
  Placer Dome holds the Beluga exploration permit, while the Chuitna exploration permit is managed by DRven Corporation.
- The North Slope Coal Field, in the Northern Alaska coal province, is considered one of the largest coal fields in the United States. There are identified reserves of 150 billion tons, with hypothetical reserves topping 4 trillion tons. There is one permit issued in this field to Arctic Slope Regional Corporation, for Deadfall Syncline. This permit is currently in reclamation status and not considered active. Arctic Slope Regional Corporation also holds the only active exploration permit in this field for their Western Arctic property.

## ALASKA COAL REGULATORY PROGRAM, ADMINISTATION AND ENFORCEMENT

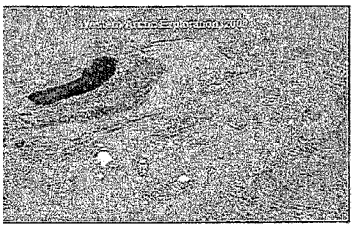
The Congress of the United States enacted the Surface Mining Control and Reclamation Act (SMCRA) in 1977. This Act provides for the establishment of a nationwide program to regulate surface coal mining and reclamation. It vests exclusive authority in the Department of the Interior, Office of Surface Mining and Reclamation Enforcement over the regulation of surface coal mining and reclamation within the United States.

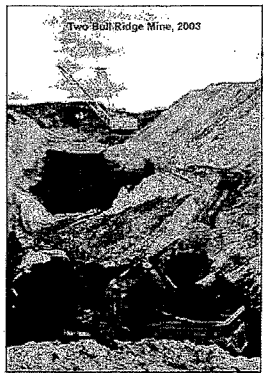
If a state wishes to assume exclusive jurisdiction over the regulation of surface coal mining and reclamation operations in the state, they must have state laws that provide for the regulation of surface coal mining and reclamation operations. The state regulations must be able to adequately demonstrate that the state has the capability of carrying out the provisions and meeting the purposes of SMCRA.

In 1983, The State of Alaska enacted the Alaska Surface Coal Mining Control and Reclamation Act (ASCMCRA) to assume jurisdiction over all coal mining activities occurring within the state. Under ASCMCRA, the commissioner of the Department of Natural Resources has exclusive jurisdiction over surface coal mining and reclamation operations in Alaska.

The purpose of the Act is to:

- protect society and the environment from the adverse effects of surface coal mining operations;
- assure that the rights of surface land owners and other persons with an interest in the land are protected from such operations;
- assure that reclamation of land on which surface coal mining takes place is accomplished as contemporaneously as practicable;
- assure that appropriate procedures are provided for public participation in the development, revision, and enforcement of regulations, standards, and reclamation plans or programs established under this chapter;
- assure that the coal supply essential to the nation's energy requirements and to its economic and social well-being is provided; and
- strike a balance between protection of the environment and other uses of the land and the need for coal as an essential source of energy.






ALASKA DEPARTMENT OF NATURAL RESOURCES
Division of Mining, Land & Water
550 West 7th Ave, Suite 720
Anchorage, AK 99501
Phone: 907-269-8650
Fax: 907-269-8930
Email: bruce_bunby@dnr.state.ak.us
www.dnr.state.ak.us

U.S. DEPARTMENT OF THE INTERIOR
Office of Surface Mining
Evergreen Plaza Building
711 South Capitol Way, Suite 701
Phone: 360-753-9538
Email: gwaller@osmre.gov

| MOISTURE | VOLATILE MATTER | FIXED C | ASH |
|---|---|---|---|
| 3 - 9% | 32 -45% | 38 - 51% | 4 - 24% |
| 25 - 27% | 33 - 34% | 30 - 31% | 10% |
| 2.5 - 7% | 22 - 33% | 35 - 56% | 8 - 27% |
| 2.5 - 8% | 22 - 36% | 35 - 56% | 5.5 - 23% |
| 26% | 36% | 29% | 9% |

**Table within Appendix I - Alaska's Coal Resources**

| ALASKA COAL | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| PROVINCE | LOCATION | Btu/lb | RANK | SULFUR | MOISTURE | VOLATILE MATTER | FIXED C | ASH |
| Cook Inlet - Susitna | Matanuska | 10,400 to 13,200 | Bituminous | 0.2% - 0.6% | 3-9% | 32 - 45% | 38 - 51% | 4-24% |
| Cook Inlet - Susitna | Beluga | 7,600 to 8,000 | Subituminous | < 0.2% | 25 - 27% | 33 - 34% | 30 - 31% | 10% |
| Northern Alaska | Cape Beaufort | 9,100 to 12,700 | Bituminous | 0.2 - 0.4% | 2.5 - 7% | 22 - 33% | 35 - 56% | 8 - 27% |
| Northern Alaska | Deadfall Syncline | 10,900 to 13,200 | Bituminous | 0.2 - 0.3% | 2.5 - 8% | 22 - 36% | 35 - 56% | 5.5 - 23% |
| Nenana | Healy | 7,800 | Subituminous | 0.17% | 26% | 36% | 29% | 9% |

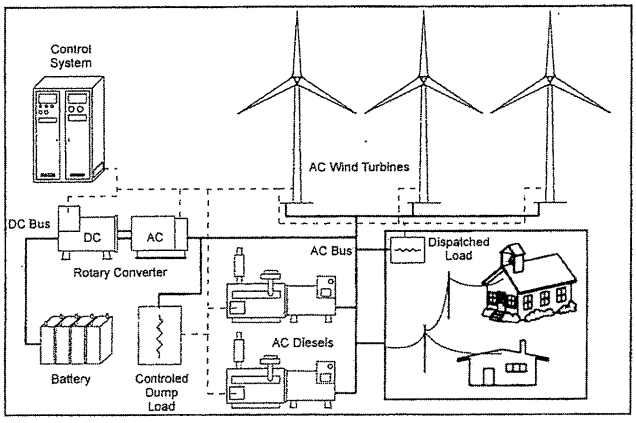
# Appendix J: Wind-Diesel Hybrid Systems in Alaska

REAC Wind-diesel costs and benefits short background

As an example for wind-diesel hybrid system costs and fuel savings, let's use Kongiganak as a typical community. This village has a little more than 300 people and uses around 1,350,000 kilowatt-hours (kWh) a year. A medium-sized wind system with the newest technology integrated with the upgraded existing diesel power system is currently estimated to cost $950,000. Based on models using the measured wind resource and village load, this system should provide roughly half of community electrical needs, displacing about 36,000 gallons of fuel a year. Assuming a fuel price of $2/gallon means $72,000 saved yearly in fuel costs. (950,000/72,000 = 13.2)

Wind Turbines in the village-scale size range have manufacturer specified life spans of 20 to 30 years. Effective long-term operation and maintenance of wind-diesel systems in isolated communities is still a concern, and costs for O&M are still hard to quantify with certainty as the technology and installed systems don't yet have a lot of operating history. Kotzebue Electric Association has been able to spread costs across several machines, and has found wind turbine maintenance to be less costly and time intensive than diesel engine generators. In a smaller village this may prove more difficult, and the required skills are more specialized. O&M costs will remain a concern until enough machines are installed around the State to support a base of technicians, local training, and vendor support.

Figure 1. Typical Wind-Diesel Hybrid Power System



| | # Turbines | KWh | % of Production | Excess KWh | |
|---|---|---|---|---|---|
| Energy Production | 1 | 356000 | 26% | 25000 | |
| | 2 | 713000 | 53% | 174000 | |
| | 3 | 1069000 | 79% | 377000 | Based on Kongganak Wind Resource |

| | | Gallons | Dollars | % fuel displaced |
|---|---|---|---|---|
| Yearly saving | 1 | 22000 | $44,000.00 | 22.92% |
| | 2 | 36000 | $72,000.00 | 37.50% |
| | 3 | 47000 | $94,000.00 | 48.96% |

**Diesel Price Assumption** $2.00

| | | |
|---|---|---|
| Installed cost | 1 | $510,000.00 |
| | 2 | $960,000.00 |
| | 3 | $1,355,000.00 |

Real Discount Rate 3%

One Turbine

**NPV of fuel savings**

| | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Equipment | | | | | | | | | | | | | | | | | | | | | |
| Operation and maintenance | | | | | | | | | | | | | | | | | | | | | |
| Fuel | $ 44,000 | $ 44,000 | $ 44,000 | $ 44,000 | $ 44,000 | $ 44,000 | $ 44,000 | $ 44,000 | $ 44,000 | $ 44,000 | $ 44,000 | $ 44,000 | $ 44,000 | $ 44,000 | $ 44,000 | $ 44,000 | $ 44,000 | $ 44,000 | $ 44,000 | $ 44,000 | $ 44,000 |
| *Total* | $ 44,000 | $ 44,000 | $ 44,000 | $ 44,000 | $ 44,000 | $ 44,000 | $ 44,000 | $ 44,000 | $ 44,000 | $ 44,000 | $ 44,000 | $ 44,000 | $ 44,000 | $ 44,000 | $ 44,000 | $ 44,000 | $ 44,000 | $ 44,000 | $ 44,000 | $ 44,000 | $ 44,000 |

*NPV* $676,261

**NPV of Wind O&M**

| | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Operation | $ 5,000 | $ 5,000 | $ 5,000 | $ 5,000 | $ 5,000 | $ 5,000 | $ 5,000 | $ 5,000 | $ 5,000 | $ 5,000 | $ 5,000 | $ 5,000 | $ 5,000 | $ 5,000 | $ 5,000 | $ 5,000 | $ 5,000 | $ 5,000 | $ 5,000 | $ 5,000 | $ 5,000 |
| *Total* | $ 5,000 | $ 5,000 | $ 5,000 | $ 5,000 | $ 5,000 | $ 5,000 | $ 5,000 | $ 5,000 | $ 5,000 | $ 5,000 | $ 5,000 | $ 5,000 | $ 5,000 | $ 5,000 | $ 5,000 | $ 5,000 | $ 5,000 | $ 5,000 | $ 5,000 | $ 5,000 | $ 5,000 |

*NPV* $77,075

Two Turbines

**NPV of fuel savings**

| | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Equipment | | | | | | | | | | | | | | | | | | | | | |
| Operation and maintenance | | | | | | | | | | | | | | | | | | | | | |
| Fuel | $ 72,000 | $ 72,000 | $ 72,000 | $ 72,000 | $ 72,000 | $ 72,000 | $ 72,000 | $ 72,000 | $ 72,000 | $ 72,000 | $ 72,000 | $ 72,000 | $ 72,000 | $ 72,000 | $ 72,000 | $ 72,000 | $ 72,000 | $ 72,000 | $ 72,000 | $ 72,000 | $ 72,000 |
| *Total* | $ 72,000 | $ 72,000 | $ 72,000 | $ 72,000 | $ 72,000 | $ 72,000 | $ 72,000 | $ 72,000 | $ 72,000 | $ 72,000 | $ 72,000 | $ 72,000 | $ 72,000 | $ 72,000 | $ 72,000 | $ 72,000 | $ 72,000 | $ 72,000 | $ 72,000 | $ 72,000 | $ 72,000 |

*NPV* $1,109,882

**NPV of Wind O&M**

| | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Operation | $ 10,000 | $ 10,000 | $ 10,000 | $ 10,000 | $ 10,000 | $ 10,000 | $ 10,000 | $ 10,000 | $ 10,000 | $ 10,000 | $ 10,000 | $ 10,000 | $ 10,000 | $ 10,000 | $ 10,000 | $ 10,000 | $ 10,000 | $ 10,000 | $ 10,000 | $ 10,000 | $ 10,000 |
| *Total* | $ 10,000 | $ 10,000 | $ 10,000 | $ 10,000 | $ 10,000 | $ 10,000 | $ 10,000 | $ 10,000 | $ 10,000 | $ 10,000 | $ 10,000 | $ 10,000 | $ 10,000 | $ 10,000 | $ 10,000 | $ 10,000 | $ 10,000 | $ 10,000 | $ 10,000 | $ 10,000 | $ 10,000 |

*NPV* $154,150

Three Turbines

**NPV of fuel savings**

| | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Equipment | | | | | | | | | | | | | | | | | | | | | |
| Operation and maintenance | | | | | | | | | | | | | | | | | | | | | |
| Fuel | $ 94,000 | $ 94,000 | $ 94,000 | $ 94,000 | $ 94,000 | $ 94,000 | $ 94,000 | $ 94,000 | $ 94,000 | $ 94,000 | $ 94,000 | $ 94,000 | $ 94,000 | $ 94,000 | $ 94,000 | $ 94,000 | $ 94,000 | $ 94,000 | $ 94,000 | $ 94,000 | $ 94,000 |
| *Total* | $ 94,000 | $ 94,000 | $ 94,000 | $ 94,000 | $ 94,000 | $ 94,000 | $ 94,000 | $ 94,000 | $ 94,000 | $ 94,000 | $ 94,000 | $ 94,000 | $ 94,000 | $ 94,000 | $ 94,000 | $ 94,000 | $ 94,000 | $ 94,000 | $ 94,000 | $ 94,000 | $ 94,000 |

*NPV* $1,449,032

**NPV of Wind O&M**

| | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Operation | $ 15,000 | $ 15,000 | $ 15,000 | $ 15,000 | $ 15,000 | $ 15,000 | $ 15,000 | $ 15,000 | $ 15,000 | $ 15,000 | $ 15,000 | $ 15,000 | $ 15,000 | $ 15,000 | $ 15,000 | $ 15,000 | $ 15,000 | $ 15,000 | $ 15,000 | $ 15,000 | $ 15,000 |
| *Total* | $ 15,000 | $ 15,000 | $ 15,000 | $ 15,000 | $ 15,000 | $ 15,000 | $ 15,000 | $ 15,000 | $ 15,000 | $ 15,000 | $ 15,000 | $ 15,000 | $ 15,000 | $ 15,000 | $ 15,000 | $ 15,000 | $ 15,000 | $ 15,000 | $ 15,000 | $ 15,000 | $ 15,000 |

*NPV* $231,225

**Benefit-Cost**

| | 1 Turbine | 2 Turbines | 3 Tubines |
|---|---|---|---|
| Cost | $ 510,000 | $ 960,000 | $ 1,355,000 |
| ***Benefit-Cost Ratio*** | ***1.18*** | ***1.00*** | ***0.90*** |

The major benefits of wind energy power generation come from direct displacement of diesel fuel. Electricity produced by the wind turbine generators represents fuel that does not have to be purchased, imported, and burned. Secondary benefits can also include reduced diesel engine run time and maintenance, excess energy for use in non-power applications such as space heating, and decreased emissions. However, tradeoffs exist in a wind-diesel system versus traditional power plants. For instance, standard diesel engines can also produce usable heat, so in valuing village wind power the displacement of diesel fuel is the main focus.

Based upon a typical coastal western Alaska wind resource, one, two and three 100 kW wind turbines (like the one installed in Kotzebue) were modeled with a load profile for a southwest village of approximately 300 residents. The Northern Power machine used in the projection is more expensive than other available models, but represents the latest in wind turbine technology for village utility applications. Cost estimates at this point recognize that building wind turbine foundations in "warm" permafrost will be challenging and costly. Results are listed below.

**Production Estimates for Northern Power NW 100 Wind Turbines in Wind Power Class 6**

| Power System Configuration | Village Usage (kWh/yr) | Electricity Generated (kWh/yr) | Diesel Fuel Use (gal/yr) | Estimated Cost of Wind-Related Components |
|---|---|---|---|---|
| Diesel-only System | 1,350,000 | 1,350,000 | 96,000 | $0 |
| 1 x NW100 wind turbine and diesels | 1,350,000 | Diesels: 1,019,000<br>Wind: 356,000<br>Excess: 25,000 | Use: 74,000<br>Savings: 22,000 | Capital: $250,000<br>Shipping: $30,000<br>Labor: $75,000<br>Foundation: $100,000<br>Other: $55,000<br>**Total: $510,000** |
| 2 x NW100 wind turbines and diesels | 1,350,000 | Diesels: 811,000<br>Wind: 713,000<br>Excess: 174,000 | Use: 60,000<br>Savings: 36,000 | Capital: $500,000<br>Shipping: $50,000<br>Labor: $115,000<br>Foundation: $170,000<br>Other: $125,000<br>**Total: $960,000** |
| 3 x NW100 wind turbines and diesels | 1,350,000 | Diesels: 658,000<br>Wind: 1,069,000<br>Excess: 377,000 | Use: 49,000<br>Savings: 47,000 | Capital: $750,000<br>Shipping: $75,000<br>Labor: $150,000<br>Foundation: $250,000<br>Other: $130,000<br>**Total: $1,355,000** |

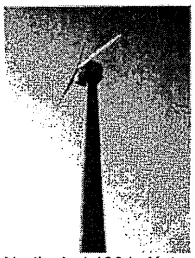
Operation and maintenance of complex wind power systems in isolation has the potential to be quite expensive, however, Kotzebue Electric Association has been successful in spreading O&M costs across several machines. Costs in the 2-3 cents/ KWh are probably high in the long-run, but appear reasonable at this point. For the purposes of this report, it is assumed that enough systems will be installed regionally that this can be accomplished.

Long term economic projections for wind energy are difficult as feasibility is highly affected by the price of fuel as well as other assumptions for design of project and long-term O&M costs. Assuming a steady $2/gallon future fuel price and a 3% discount rate, the one turbine project is economic in simple cash flow projections with a Benefit-Cost Ratio of 1.18. [(Net Present Value of fuel savings – O&M) / Cost of project]

Without valuing the excess energy or reduced expenses associated with the diesel engines, two wind turbines should be able to pay for themselves in fuel saved over their 20 year lifetime with a BC ratio of one. As village load grows, excess power from the wind can go towards more valuable power production making the system more economically attractive. Yearly fuel savings in a two turbine configuration is 36,000 gallons or about 37.5% of fuel used in power generation. Obviously, increased future fuel prices make this portion of electricity look better, and lower fuel prices make the wind portion economics less attractive. One important aspect of renewable energy from a village point of view is that once the wind-diesel system is working, the costs associated with that portion of power are low and relatively constant compared to the year-to-year price swings of diesel fuel.

When considering a high penetration wind system with three wind turbines, excess energy and the ability to shut down diesel engines should be given some value as these characteristics are essential to the system, both operationally and economically. This type of system is much more complex, but in the model displaces over half the fuel used in community power generation, with significant amounts of excess energy produced as well. Under the simple assumptions of this report, only valuing displaced diesel, a three turbines system has a BC ratio of 0.9. A future fuel price of $2.20 makes this system break even without valuing excess energy or avoided expenses and O&M on diesel engine and generators.

In summary, wind energy has high upfront capital cost and more complicated operating requirements. However, in a good wind regime with long-term fuel prices in the $2.00/gallon range wind-diesel hybrid systems can be an economically attractive alternative to standard diesel generator systems. Depending upon the system configuration, wind-diesel hybrids have the potential to displace a significant amount of fuel using a clean and locally available resource.



Northwind 100 in Kotzebue

## Appendix K: Alaska Rural Energy Plan, Vol. II, Section 3, pages 3-38, 39, 40

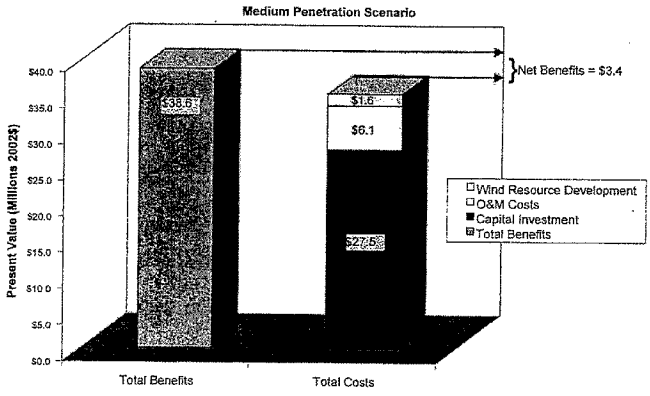


- Review of DOE Wind Energy Program Best Practices
- Review of American Wind Association Best Practices
- Review of Canadian and European Wind Energy Market Best Practices
- Identification of key market failures which prevent or impede wind resource development relative to socially optimal economic investment, defined here as B/C>1.0, 15 years, 5 percent real discount rate.

### 3.5.1.2 Results of Market Reconnaissance Study

Based on an economic analysis of individual PCE eligible communities, roughly 30 rural Alaska communities representing 15,000 residents, present **attractive** opportunities for wind resource development, with reconnaissance benefit/cost ratios ranging from 1.0 up to 1.7. These communities represent, in aggregate, a total benefit of $38.6 million and a total cost of $35.2 million.[69] The potential net economic benefits from these communities are sufficient to justify a wind resource development program on the order of $35 million – including $1.6 million for detailed reconnaissance, preliminary design, and final feasibility plus $27.5 million for final design and construction contingent upon a finding of net economic benefits at the final feasibility analysis stage.[70]

**Figure 3-6. Rural Alaska Wind Energy Development**




[69] Total Cost = Capital + O&M + Wind Development Program Costs = $27.5M + $6.1M + $1.6M = $35.2M. All figures are expressed in present value 2002$, based on cash flow estimates over a15 year life using a 5% real discount rate.

[70] See Figures 3-3 and 3-4: Wind Resource Assessment Program

**Table 3-7. Wind Resource Market Potential Study – Attractive Opportunities**

| Community | Population | Wind Benefits (PV 2002$) | Wind Costs (PV 2002$) | Benefit/Cost Ratio |
|---|---|---|---|---|
| 1 St. Paul | 532 | $2,999,207 | $1,736,894 | 1.73 |
| 2 Atka | 92 | $550,296 | $326,113 | 1.69 |
| 3 Pedro Bay | 50 | $504,504 | $317,319 | 1.59 |
| 4 Platinum | 41 | $496,160 | $314,400 | 1.58 |
| 5 Deering | 136 | $1,239,215 | $799,781 | 1.55 |
| 6 Chefornak | 394 | $473,785 | $325,063 | 1.46 |
| 7 Gambell | 649 | $1,151,536 | $817,697 | 1.41 |
| 8 False Pass | 64 | $438,825 | $324,611 | 1.35 |
| 9 Akutan | 713 | $437,244 | $324,514 | 1.35 |
| 10 Nightmute | 208 | $420,263 | $324,281 | 1.30 |
| 11 Kipnuk | 644 | $1,021,549 | $815,891 | 1.25 |
| 12 Kwig | 338 | $401,829 | $324,041 | 1.24 |
| 13 Kongiganak | 359 | $394,250 | $319,830 | 1.23 |
| 14 Hooper Bay | 1014 | $1,284,827 | $1,052,828 | 1.22 |
| 15 Perryville | 107 | $376,719 | $317,304 | 1.19 |
| 16 Savoonga | 643 | $1,222,002 | $1,035,531 | 1.18 |
| 17 Wales | 152 | $382,008 | $323,732 | 1.18 |
| 18 Nunapitchuk | 466 | $1,444,802 | $1,260,358 | 1.15 |
| 19 Chevak | 765 | $928,455 | $814,585 | 1.14 |
| 20 Toksook Bay | 532 | $673,775 | $594,993 | 1.13 |
| 21 Kokhanok | 174 | $348,507 | $315,045 | 1.11 |
| 22 Akiachak | 585 | $872,608 | $789,210 | 1.11 |
| 23 Point Lay | 247 | $1,853,265 | $1,692,643 | 1.09 |
| 24 Kwethluk | 713 | $859,661 | $789,011 | 1.09 |
| 25 Mekoryuk | 210 | $344,587 | $323,200 | 1.07 |
| 26 St. George | 152 | $326,586 | $318,105 | 1.03 |
| 27 Brevig | 276 | $330,412 | $322,980 | 1.02 |
| 28 Unalaska | 4283 | $15,595,178 | $15,375,554 | 1.01 |
| 29 Tununak | 325 | $325,808 | $322,938 | 1.01 |
| 30 Egegik | 116 | $583,940 | $581,032 | 1.01 |
| 31 Atmauluak | 294 | $319,491 | $318,773 | 1.00 |
| **TOTALS** | **15,274** | **$38,600,000** | **$33,600,000** | **1.15** |

Source: MAFA Recon Model Ver 1.3 (2002), see Appendix A: Market Potential Estimate, Medium Wind Penetration, Medium Avoided Diesel Cost Scenario; Population (2000 Census)

Another 17 communities representing 16,000 residents represent **potentially attractive** opportunities for wind resource development, with reconnaissance benefit/cost ratios ranging from 0.85 to 1.0. These communities represent, in aggregate, a total benefit of $53 million and a total cost of $58 million under the medium wind penetration scenario. While the benefit/cost estimates for these communities are less than one, they are within the margin of uncertainty associated with the market

reconnaissance and warrant additional in-depth record and on-site reconnaissance to reduce the uncertainty of the potential value of wind resource development in these communities.[71]

**Table 3-8. Wind Resource Market Potential Study – Potentially Attractive Opportunities**

| Community | Population | Wind Benefits (PV 2002$) | Wind Costs (PV 2002$) | Benefit/Cost Ratio |
|---|---|---|---|---|
| Kasaan | 48 | $311,238 | $314,620 | 0.99 |
| Sand Point | 842 | $2,634,315 | $2,675,209 | 0.98 |
| Anaktuvuk | 314 | $2,581,917 | $2,630,706 | 0.98 |
| Pilot Point | 92 | $309,671 | $316,369 | 0.98 |
| Craig[72] | 2809 | $1,601,484 | $1,647,319 | 0.97 |
| Port Heiden | 116 | $557,638 | $580,645 | 0.96 |
| Quinhagak | 595 | $733,077 | $792,739 | 0.92 |
| Bethel[73] | 5471 | $27,691,114 | $30,257,244 | 0.92 |
| Newtok | 284 | $294,578 | $322,478 | 0.91 |
| Nelson Lagoon | 87 | $287,696 | $318,349 | 0.90 |
| Goodnews Bay | 256 | $284,779 | $316,002 | 0.90 |
| Tenakee Springs | 93 | $275,948 | $314,056 | 0.88 |
| Shishmaref | 556 | $1,082,609 | $1,234,753 | 0.88 |
| St. Mary's | 442 | $1,598,195 | $1,848,304 | 0.86 |
| Kotzebue | 2932 | $10,498,880 | $12,142,765 | 0.86 |
| Old Harbor | 276 | $489,485 | $576,007 | 0.85 |
| Kake | 745 | $1,758,797 | $2,080,121 | 0.85 |
| **Total** | **15,958** | **$52,991,423** | **$58,367,686** | **0.91** |

Source: MAFA Recon Model Ver 1.3 (2002), see Appendix E: Market Potential Estimate, Medium Wind Penetration, Medium Avoided Diesel Cost Scenario

[71] It is interesting to note that subsidized wind development has already begun in Kotzebue—a community with a benefit/cost ratio of 0.86 in the market reconnaissance study under the medium wind penetration case. An investment in additional reconnaissance in these communities is roughly equivalent to buying an option on the potential that the B/C for wind resource development in these communities will exceed one after further reconnaissance. The potential value of the option is not just that the wind resource may turn out to be sufficient to produce a project with a B/C>1.0. Scale and scope economies may be a consideration. For example, a particular community may be a regional center that is capable of servicing other communities with higher B/C ratios, bringing regional efficiencies to those communities and itself. Potential sources of regional efficiencies include on-site wind resource assessment, micro-siting considerations, knowledge of arctic design trade-offs, foundations, towers, wind turbines, controls and installation contracting, etc.

[72] Please note that the wind resource market potential is based on potentially displacing less than half of the roughly 150,000 gallons of diesel fuel a year that is used to complement hydropower.

[73] This is a particularly interesting case of a regional center with a significant diesel based cogeneration system. Given the potential economies of scale for development of a wind hybrid system with dump loads that could be used for the district heating system, further investigation may yield additional insight into the trade-offs and potential integrations between wind-diesel hybrids with cogenerated energy from both wind and diesel sources. In addition, Bethel's potential to provide regional wind energy services to other communities in the delta warrants additional investigation.

## Appendix L: Energy Star – Energy Smart: RurAL CAP

### Energy Star-Energy Smart: Bright Ideas for Alaska

The Rural Alaska Community Action Program, Inc. (RurAL CAP) is seeking funding for a three-year project that will use **market-based approaches to increase energy efficiency in homes and community buildings**. The objectives of the program will be to:

1) **inform** rural residents of energy conservation opportunities and give them incentives to take advantage of those opportunities,

2) **educate** village stores about the availability of bulk energy efficient products and show them how to access the products so they can sell them locally, and

3) **share information** with local governing governments about how they can encourage and implement energy conservation in their community buildings (schools, washeterias, etc.) and what the benefits of such changes would be.

RurAL CAP will work with **energy conservation product suppliers** and service companies in regional hubs (Dillingham, Bethel, etc.) and urban communities (Anchorage, Juneau, Fairbanks) in Alaska to develop a discount booklet for distribution in rural Alaska. The booklet will showcase existing suppliers of energy efficient products and service providers (those who do energy audits, product installations, etc.) to rural residents who likely would not otherwise know of these resources or where to buy them. The suppliers will provide a variety of incentives to motivate rural residents to buy their products or services instead of traditional products that have high energy needs. This will create a win-win situation in that **suppliers will earn new business** through this advertising and **rural residents will save money** over both the short term (due to the incentives) and the long term (due to the energy cost savings of the new products).

The types of products that will be advertised in the discount booklet will vary depending on the target customer, but general topic areas will include products that:

- **Conserve Electricity**, such as Compact Fluorescent Lamps (CFLs), efficient T-8 fluorescent tubes and electronic ballasts, residential motion sensors, refrigerator coil cleaners etc;
- **Save Home Heating Fuels**, such as Toyotomi and Monitor-type home heating units, products for insulating and sealing homes; and,
- **Save Water**, such as low-flow kitchen and bath fixtures.

In the first year of the program, RurAL CAP will offer subsidized advertising rates to suppliers/service providers to encourage them to participate in the program. Each supplier/service provider will track the coupon codes so that new sales due to this program will be easily identified. Periodically, the supplier/service provider will report their new business statistics to RurAL CAP. RurAL CAP will use this information to recruit additional suppliers/service providers in the second year of the program. The advertising rate will be increased incrementally in the second and third years, thus increasing the overall input from advertisers into the cost of printing the booklet. By the end of the third year, RurAL CAP expects that the advertising fees will be substantial enough to sustain an annual production and distribution of the booklet.

The booklet will also include energy conservation information, tips, and suggestions for homeowners, governments, renters, and landlords alike. The primary purpose of the information will be to **motivate**

**residents to invest in energy saving products** for their homes. Disposal of compact fluorescent bulbs and other potentially hazardous wastes will be discussed in the booklet as well.

RurAL CAP will **work with Utilities statewide** to distribute information about the booklets and perhaps even the booklets themselves, most likely with resident's monthly bills or special mailings. RurAL CAP will also work with **state and federal agencies** to promote the booklet, making sure that residents hear the energy conservation message on a repeated basis throughout the year. Rural Alaskans may get a notification after they have been accepted as recipients of LIHEAP/energy assistance funds, then get the booklet in the mail with their electric bill, and hear PSAs about the booklet periodically on their local radio station.

Another important strategy for increasing access to energy efficient products, especially those meeting the US EPA's Energy Star standards, will be to develop an "E-Sales for Alaska Energy" website, to be hosted on **RurAL CAP's Alaska Environmental Resource Hub Online** (AERHO). The discount booklet will live online. On this web-based sales and education portal the same residents, governments and suppliers will be able to access information and products devoted to energy conservation. They may also:

1) **purchase products** not available locally from advertisers in the booklet. Sales sites will include the same discounts and vendors as the booklet, and because of increased space will also be able to include more energy conservation products than the booklet does;
2) **provide simple education** and calculators for residents to **figure out energy cost savings** for electrical and heating systems. People often want to know, *How quickly will I save what I invested in these expensive light bulbs?*;
3) mirror the website of the vendor or retailer so that **purchases are made from the seller** and not from RurAL CAP. Mirrored sites will only contain energy conservation products, but will allow site visitors to access the vendor's larger site;
4) **provide links** to Alaska-based energy auditors for government and business; and,
5) **provide energy conservation education** for homeowners, governments and retailers to increase knowledge about vital money-saving opportunities in Alaska.

A major focus of the Energy Star-Energy Smart: Bright Ideas for Alaska booklet and website will be an "Alaska-only" requirement. The goal is to introduce Alaskans from all corners of the state to products and services readily available in Alaska. Where there are products only available Outside, we hope that enough interest is generated in-state to warrant retailers and wholesalers alike to begin to carry these products.

Only when Alaskans begin to understand the **tangible benefits of energy efficient products** will they make efforts to buy them. Incentives such as those in this proposed project will help Alaskans to make that first step, as many products are expensive up-front. Only when there is a market demand will retailers be able to sell their products around the state, creating relationships with buyers and government alike, and opening the rest of their product lines to consumers.

RurAL CAP aims to **help Alaskans to buy Alaskan, saving energy for Alaska** at the same time.

For more information contact:
Brian Connors, RurAL CAP Community Development Division Director at 279-2511 x339 or
bconnors@ruralcap.com.

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