

Agency: Commerce, Community and Economic Development**Grants to Named Recipients (AS 37.05.316)****Grant Recipient: Chaninik Wind Group****Federal Tax ID: 92-0068388****Project Title:**

Chaninik Wind Group - Regional Wind Energy Systems Purchase and Installation

State Funding Requested: \$ 1,600,000**House District: 38 - S**

One-Time Need

Brief Project Description:

Purchase and install medium sized wind turbines along with the control and integration systems needed.

Funding Plan:**Total Cost of Project: \$1,600,000**

	<u>Funding Secured</u>		<u>Other Pending Requests</u>		<u>Anticipated Future Need</u>	
	<i>Amount</i>	<i>FY</i>	<i>Amount</i>	<i>FY</i>	<i>Amount</i>	<i>FY</i>
State Funds	\$1,600,000					
Total	\$1,600,000					

Detailed Project Description and Justification:

The requested funds are to purchase and install medium sized wind turbines to augment the power supply for Kwigillingok. This project would be the second phase of a broad plan to bring wind power generation to the southwest Alaska villages of Kongiginak, Kwigillingok, Tuntutuliak and Kipnuk. A similar system to the one proposed has been installed in nearby Kongiginak and is functioning well.

According to the Alaska Energy Authority Wind Assessment Program Report the Chaninik Wind Group Area of southwest Alaska has one of the highest potentials for wind energy to be found in Alaska and in the U.S.

Escalating fuel costs have crippled the economies in the region and utilizing wind power is one way to promote healthy, stable communities. By installing wind power generation systems in the wind rich southwest Alaska region villages such as Kwigillingok can displace over 35,000 gallons of diesel fuel annually.

Project Timeline:

If funds were received in the summer of 2008, project could be completed the end of 2009

Entity Responsible for the Ongoing Operation and Maintenance of this Project:

Chaninik Wind Group

Grant Recipient Contact Information:

Contact Name: William Igurak
Phone Number: 588-8626
Address: P.O. Box 49 Kwigillingok, AK 99622
Email: wmgurak@att.net

Has this project been through a public review process at the local level and is it a community priority? Yes No

Chaninik Wind Group

Chaninik Wind Group

William Igkurak, President
Kwig Power Company
P.O. Box 49
Kwigillingok, Alaska 99622
Ph. (907) 588-8626 Fax (907) 588-8627
Email: wmigkurak@att.net

Honorable Senator Lyman Hoffman
Alaska State Capitol
Rm. 518
Juneau, AK 99801

Dear Senator Hoffman,

Thank you for finding time to meet with us.

I am following up with information supporting our request of \$4.8 million to construct wind energy systems in the communities of Kwigillingok, Tuntutuliak and Kipnuk, as a single project.

We have one of the finest wind resources in Alaska and we are asking for your help to harness that resource to reduce the impacts of rising energy costs, and foster new opportunities for our communities.

We are also asking to approach this need as a group of villages connected by culture, close in geography and sharing a similar need. We are asking that this project be approached as a single grouped project so that we can build in the capabilities needed for on-going support.

We know this is a lot to ask, but we also know that for our communities to survive we must move in this direction. Also, we recognize that the State is proposing to make a large commitment to developing our renewable energy resources to build a safer cleaner environment and more stable economy. Based on this commitment and if one is to consider the alternatives, it will be apparent there is no better place to begin than with the Chaninik Wind Group, in the Bethel Region. We have the wind. We have the need, and we have carefully considered the technology and our responsibilities.

Enclosed is an explanation of our request for funding. It is a brief description of our plan, and the purpose for the funding.

We are asking again for your help and support.

Respectfully,

Wm

Harvey,

Sam

Deanna

Our Group

The primary goal of this group is to develop, deploy and successfully operate wind energy systems and other technologies that can serve as cost effective and environmentally responsible alternatives to fossil fuels. This project is proposed as a multiple community project for three reasons:

1. Lower construction costs. Experience has shown that the installation of multiple systems and multiple turbines reduces individual project costs. Design, procurement, mobilization, permitting, geotechnical analysis, shipping, equipment, all have high fixed cost thresholds. Group procurement increase buying power and give the projects more for the money. Three to four projects in the same general area lower the costs for all projects. Purchasing ten to twelve turbines, instead of two or three enable cost saving that can be used to purchase more and better equipment.
2. Lower support costs. Service costs can be spread across multiple machines and several projects in a service area. Combine project will support the purchase of regional support and construction equipment and enable the establishment of a regional support center, as well as more extensive training and parts inventories. A sufficient number of nearby wind turbines can support a full time local technician or share technical help and parts among adjacent systems. This is needed to increase productivity and reduce long term service costs.
3. Creating and capturing the value of the investment. The capacity in local knowledge, equipment, and expertise gained from the evaluation, construction, commissioning operation and maintenance of these systems and the costs saving they create will foster new business opportunities for these communities. Keeping dollars sent outside the community to pay for fuel will be reinvested in healthier families and more stable communities.

By working together we can lower the construction costs of the project, build more productive systems and create a service center for continued operations and maintenance for all communities in the region.

As a Group we have educated ourselves about wind systems and we be focused on building high performance wind diesel systems which use of advanced controls and low load diesel technology. By working together and tackling projects as a group we are able to marshal more resources, to lower costs and build our capacity.

Our Project Funding Request

We are asking for \$4.8 million to build high penetration wind diesel systems in Kipnuk, Kwigillingok and Tuntutuliak. **Each basic system will cost \$1.6 per community**, and will include three medium sized wind turbines (65 to 100 kW) along with the control and integration systems needed to fully utilize the wind energy by the community. These systems will displace over 35000 gallons of fuel annually in each community, and we expect to use the saving to further decrease our dependency and increase our capabilities to build and support these systems. The cost are roughly broken down as \$ 3,000,000 to purchase and install wind turbines, \$1,400,000 for transmission, communications, integration, controls and metering, and \$400,000 for project design, management, and support.

Chaninak Wind Work Plan & Budget

The Bethel Region Wind Group Chaninik

The Chaninik Wind Group represents the communities of Kongiganak, Tuntutuliak, Kwigillingok and Kipnuk. The group is made up of local utility managers who have the full supported of the local communities, to pursue wind development for their communities, in order to reduce dependency on diesel fuel, lower energy costs, and foster opportunities for economic development. Together the group represents over 2000 residents of the lower Kuskokwim region. We have completed our reconnaissance studies and have started on our phase 1 project in Kongiganak and are requesting Phase 2 construction funding of \$4.8 million dollars in construction funding to build three high penetration wind diesel systems in each community.

Our group was incorporated as a non-profit in 2005, with the understanding that without harnessing our renewable resources our communities cannot not survive the impacts of increasing fuel costs, and that only as a group of like minded communities working together could we make that happen.

After considerable efforts, we have concluded that to be successful we must approach wind development at a scale sufficient to support multiple installation which will enable lower costs, create fuel displacements significant enough to support a trained staff, and a project large enough to enable the creation of a regional service center in Kongiganak.

Our Project Goals

- Build wind systems which are robust and flexible, with a target of reducing diesel fuel usage at the powerplant by 40%, and heating fuel usage at public facilities by 20%.
- To install proper equipment, which can be constructed, managed, and supported locally.
- Foster opportunities for long term stable energy supply, lower costs, and new businesses.

How we will measure progress:

The outcomes of the project can be measured from a technical, operational, and economic perspective. The primary criteria will be:

- ▶ Fuel and operational savings
- ▶ Power system reliability
- ▶ Increased employment in the installation, operation and maintenance of the wind systems.

Budget

Budget Estimate		Three (3) Communities Kwig, Kipnuk, Tuntutuliak,
Construction		
Final Design, surveying, substation, communications, control and fabrication drawings, foundation design, agreements, administration, etc.		\$ 350,000
Materials: Wind turbines, foundation materials, transmission, metering, communications, board walks, and shelters		\$ 2,250,000
Integration, system control, energy capture		\$ 1,000,000
Labor (all crafts)		\$ 500,000
Equipment (crane, pile driver)		\$ 300,000
Shipping		\$ 250,000
Training, O&M support		\$ 50,000
Evaluation and on going commissioning for first 24 months		\$ 100,000
Three village project budget		\$ 4,800,000
Turbine Potential Fuel Savings	Single Turbine	Grouped Project, 12 turbines with Kong
Fuel displaced per turbine, (160,000 kWhrs/13 kWhrs/gallon = 12300)	12,000-18,000 gallons	140,000 -210,000 gallons
Estimated annual value @ \$3.40/gallon	\$40,000 -\$60,000	\$476,000 -\$714,000

Kongiganak Service Center

A long range plan will require a service center to provide construction and maintenance support for the wind systems. Kongiganak is a logical location for equipment storage and maintenance, staging of spare parts, and service equipment. Kong has a year round landing and staging area that is above the flood plain, has good access to summer barges and winter overland transportation, and will soon have the longest runway in the area. A project of sufficient scale could capitalize a crane and pile driver which will be is needed to install turbines, turbine foundations and power lines. A good rough terrain crane could travel to surrounding communities in the winter and be shipped by barge to other sites in the summer. The Village

Corporation has access to landing areas, is working to procure an existing building which can be used for servicing equipment and wind machines.

Completed Work;

Phase 1

- ▶ Organizational and administrative planning.
- ▶ Resource Assessment
- ▶ Site Selection
- ▶ Environmental Review, Permitting
- ▶ Preliminary soils Investigation and Foundation design
- ▶ Interconnection and Integration Evaluation
- ▶ Construction Cost Estimating
- ▶ Financial Feasibility
- ▶ Operations and Maintenance Plan.
- ▶ Preliminary Design Report

Schedule:

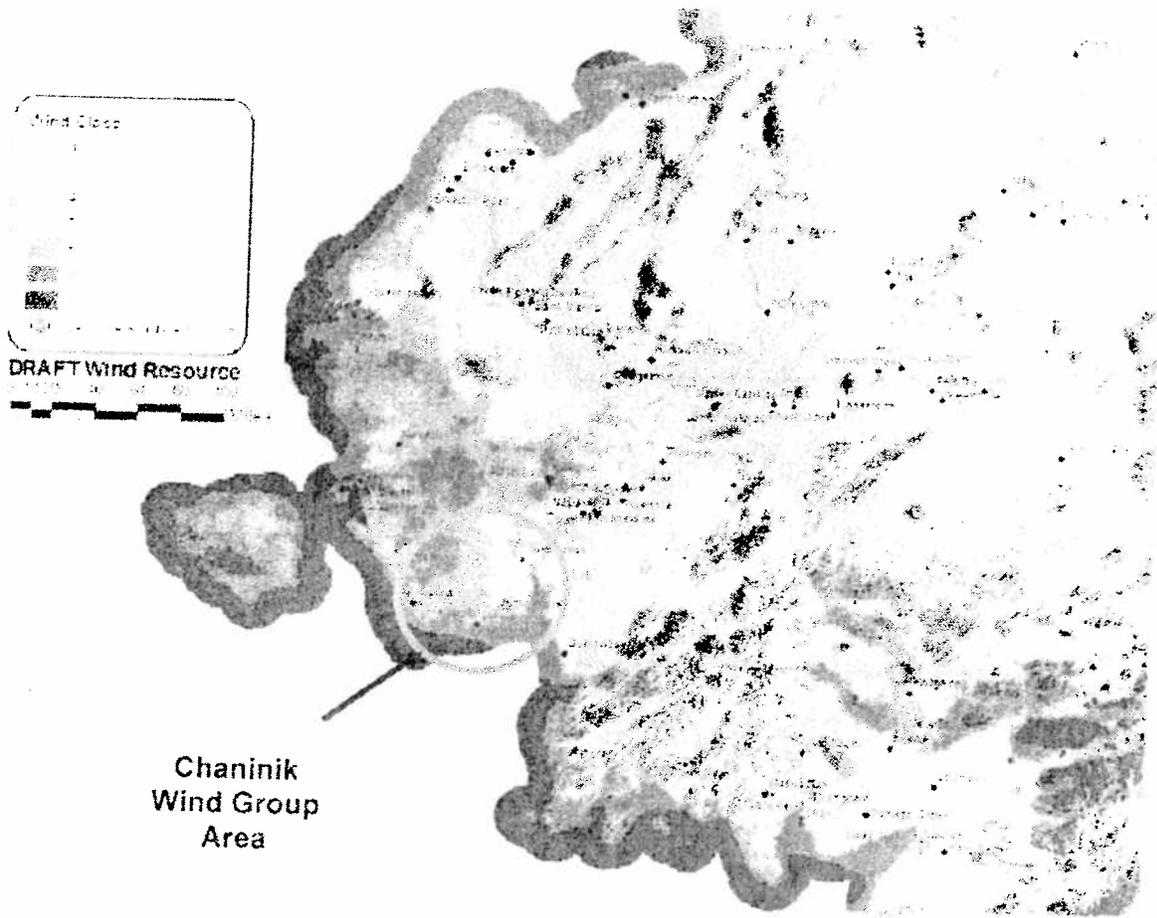
The construction schedules are dictated by wind turbine supply capability, barge schedules, and the ability to get construction equipment and materials on the site. Construction in Kipnuk, Kongiganak and Kwigillingok is restricted to winter only, while construction in Tuntutuliak will utilize the abandoned runway and can be conducted in the fall.

If funds were received in the summer of 2008, we would have all projects completed by the end of 2009. The size of the project will give the communities leverage with suppliers for better pricing, schedules, and will spread the cost of equipment and training.

The Wind Resource

The Lower Kuskokwim region of the state includes 20 villages and has one of the best wind resources in the state. The winds are strong, steady and reliable. The average consistent power in the wind across this region is some of the best to be found in Alaska and in the U.S., with a wind power class of 7 (See Figure 1. Wind Classes for Southwest Alaska), meaning average power densities per square meter of wind turbine swept area is 1000 Watts/square meter. A high resolution wind map has been developed by the National Renewable Energy Laboratory which better defines the resource.

Figure 1: Wind Classes for Southwest Alaska



Obtained from Alaska Energy Authority (AEA) Wind Assessment Program Report

Wind Diesel System Basic Operations

The system diagram (*Figure 2 Wind Diesel System Diagram*), is provided to give a basic understanding of the function of the system. The wind turbines, the community loads and the diesel plant are connected to the system electrical buss. A Low-Load diesel is proposed as a buffer to lulls in the wind, and to provide grid stability at high wind energy levels. The Low-load diesel is a highly specialized diesel genset which replaces one of the existing generators in the power station. The block diagram representing Excess Wind Energy capture is shown in this drawing as an indication of the future upgrade pathways, which will be anticipated to emerge and produce additional fuel savings. This block represents, such components such as thermal stores which capture wind and store wind energy as heat, battery and flywheel system which store real energy and allow diesel off operation. With the exception of thermal energy storage in ceramic stores, these more advanced technologies are not currently economical due to the small size of the system,

This electric power system is designed to maintain the balance between all sources of energy and all loads for both active and reactive power, while regulating voltage and frequency. The proposed system design is simple and combines the wind turbines and diesel generators to form a highly productive yet stable and easy to operate hybrid energy system.

Wind Turbines:

There a number of wind turbines which have been considered for this project. We have selected the Vestas V-15 machines. A discussion of candidate wind turbines follows.

Entegrity 15/50:

Formerly called the Atlantic Orient Company (AOC) Model 15/50 is a horizontal axis, three bladed, downwind, free yaw wind turbine with a nominal power rating of 65kW. The rotor diameter is 15 meters. The turbine is mounted on a truss tower with a standard height of 25 meters. The turbine achieves a power output of 50kW at 11.0 mps (24.5 mph) and a rated output of 64.9 kW at 16.5 mps. During the winter months in Alaska, under very cold temperatures and extremely high air densities, the AOC turbine typically exceeds its maximum power rating of 66kW. Currently there are 18 AOC turbines installed in Alaska - 12 in Kotzebue, 4 in Selawik and 2 in Wales. The Kotzebue turbines have been operating with over 90% availability since 1998. Common problems with this turbine have been, unscheduled and frequent release of trip brakes, difficulty resetting of brakes, unnecessary energy consumption on start up, upwind operation, highly variable output during turbulent wind conditions, and slow service response, as well as inability to ship the turbines as complete and tested assemblies. These problems have plagued the cost and performance issues. The company is under new management and is making good progress at addressing these problems. New controller and tip brake designs have been introduced in Selawik and attention is being given to a number of other small improvements. The elimination of the dynamic brake, and repackaging of the turbine controller, as well as the development of various foundations, tower and erection systems have been proposed to further reduce installation costs.

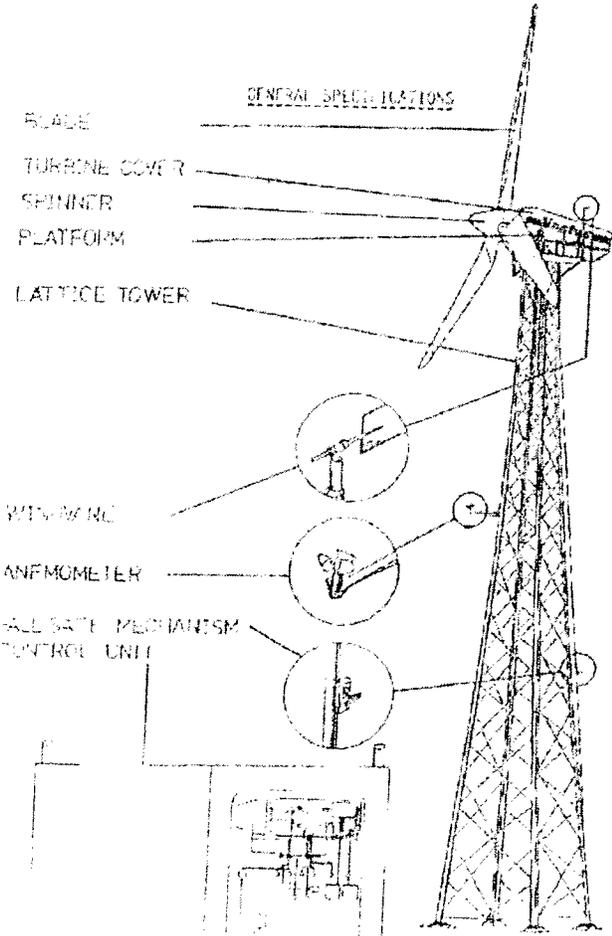
Northwind 100kW:

The Northwind 100 is a horizontal axis, three bladed, upwind, fixed pitch, variable speed, yaw driven wind turbine with a nominal power rating of 100kW. The rotor diameter is either 19.1 meters or 20 meters. The turbine is mounted on an enclosed steel tower that allows access to the turbine and houses the system controller in the base. The turbine achieves a power output of 100kW at 15.5 mps (34.7 mph) and a maximum output of 102.5 kW at 17.1 mps (38.1 mph). During the winter months in Alaska, under very cold temperatures and extremely high air densities, the Northwind 100 turbine typically exceeds its maximum power rating of 100kW. One unit has been operational in Kotzebue since 2000. The maximum observed power output has been 120kW. The turbine is variable speed, permanent magnet generator; the 3 phase AC power is conditioned through an inverter to produce energy of a specified voltage and frequency. The turbine rotor is fixed in pitch, and regulation of the turbine power output through power set point conditioning system is not yet available. Reported problems in Kotzebue have been minor, but shutdowns have been frequent. The control screen touch screen and yaw drive failed due to freezing, but modifications to the systems have been made to correct these problems. According to Kotzebue Electric, this turbine has been performing very well, and is usually producing some amount of energy, even in very low winds. The primary issue with this turbine is cost. The typical installed cost is \$500,000 to \$ 600,000 per machine.

Vestas V-15

The proposed wind turbine for this project is a remanufactured E15 available from several suppliers, EMS of South Dakota. This turbine was originally manufactured as the V15 by Vestas Wind Systems A/S of Randers, Denmark. The E15 is rated at 65 kW output (three phase) with maximum power output

of approximately 75 kW in standard density air. It is an upwind machine with active yaw drive control. The blades are fixed pitch and hence the turbine is passive stall regulated. It has a gearbox drive train connecting the 15-meter diameter, three-blade rotor to the generator. The braking system consists of both aerodynamic blade tip brakes and a fail-safe hydraulic disc brake. The turbine is well proven and well understood. It is of a simple very robust design. The three blade rotor is connected to 6 inch diameter drive shaft which is bolted a main parking brake. The rotor is coupled to the generator through a gearbox which is rated for a continuous 135 kW operation. The entire wind turbine is very well built and the maintenance components are available from local suppliers, (brake pads, lubricants, gaskets, coupling, etc.) and specialty parts are available from numerous suppliers in the lower 48 as well as Europe. The wind turbines will be installed on tiltup towers to eliminate the requirement for an onsite crane. It is estimated that these machines can be installed for around \$ 225,000.



NATIVE VILLAGE OF KWIGILLINGOK
Kwigillingok IRA Council

RESOLUTION NO. 05-09-25

A RESOLUTION SUPPORTING ENERGY REDUCTION COST EFFORTS BY INSTALLING WIND TURBINES THROUGH THE ESTABLISHMENT AND EFFORTS OF CHANINIK WIND GROUP.

WHEREAS: The Native Village of Kwigillingok is a federally recognized Alaska Native Village governed by the Kwigillingok IRA Council, and

WHEREAS: The cost of living is steeply increased by the location of our villages in Remote Western Alaska, to include electricity, and

WHEREAS: We are constantly trying to decrease the cost of producing electricity and increase efficiency for the benefit of our consumers, and

WHEREAS: The Chaninik Wind Group is being formed by the Villages of Kongiganak, Kwigillingok and Kipnuk to carry forward these efforts.

NOW THEREFORE BE IT RESOLVED THAT the Native Village of Kwigillingok, Kwigillingok IRA Council supports the formation of the Chaninik Wind Group, and its efforts to apply for, secure and obtain funding to install High-Penetration Wind Turbines in the three villages to reduce electrical costs in an environmental friendly manner, and

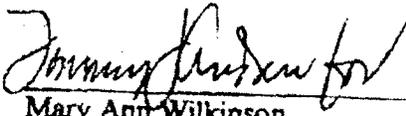
BE IT FURTHER RESOLVED THAT the Native Village of Kwigillingok will address the necessary issues to bring this project effort to fruition.

CERTIFICATION:

The foregoing resolution was passed and approved by the duly convened meeting of the Kwigillingok IRA Council, this 14th Day of ~~September, 2005~~ February, 2006 by vote of 3 YES, 0 NO, and 0 ABSTAINING.



Owen M. Lewis
President



Mary Ann Wilkinson
Secretary

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NATIVE VILLAGE OF KONGIGANAK
Resolution No. 05-12-02

A RESOLUTION FOR THE NATIVE VILLAGE OF KONGIGANAK TO ESTABLISH AND BE A MEMBER OF THE CHANINIK WIND GROUP AND DEVELOP HIGH PENETRATION WIND-DIESEL PROJECTS BY UNITING WITH MEMBER VILLAGES WITH SIMILAR INTERESTS.

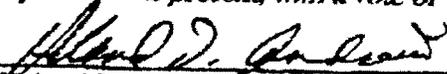
- WHEREAS: The Native Village of Kongiganak is a federally recognized Tribal entity in the State of Alaska, and;
- WHEREAS: The Kongiganak Traditional Council is the governing body for the Native Village of Kongiganak, and;
- WHEREAS: The Kongiganak Traditional Council provides electrical utility services to the community d.b.a. Puvumaq Power Company, and;
- WHEREAS: The Chaninik Wind Group's interests are to develop wind projects to balance and stabilize high energy costs, and;
- WHEREAS: Wind turbines will reduce fuel costs and energy production costs and therefore stabilize local economy, and;
- WHEREAS: Kongiganak is an economically distressed village as defined by the State of Alaska, and;
- WHEREAS: Kongiganak is a small community with no resources, but has an excellent wind resource.

NOW THEREFORE BE IT RESOLVED THAT, the Native Village of Kongiganak, Kongiganak Traditional Council, supports the establishment of the Chaninik Wind Group and its efforts to apply for, secure and obtain funding to install wind projects and;

BE IT FURTHER RESOLVED THAT: Puvumaq Power Company will be an active member of the Chaninik Wind Group and support its members and its efforts.

CERTIFICATION

This resolution was passed and approved by the Kongiganak Traditional Council on this 13th day of December, 2005 of which a quorum was present, with a vote of 3 (Yes) and 0 (No) and 2 (Abstaining).


Roland P. Andrew - President,
Kongiganak Traditional Council

Attest:

Mary S. Nicholai
Mary S. Nicholai, Secretary

**NATIVE VILLAGE OF KIPNUK
KIPNUK TRADITIONAL COUNCIL**

P.O. Box 57 • KIPNUK, ALASKA 99614
(907) 896-5515 • FAX (907) 896-5240

RESOLUTION #05-23

A RESOLUTION SUPPORTING ENERGY REDUCTION COST EFFORTS BY INSTALLING HIGH-PENETRATION WIND TURBINES THROUGH THE ESTABLISHMENT AND EFFORTS OF THE CHANINIK WIND GROUP.

WHEREAS, The Native Village of Kipnuk is a federally recognized Alaska Native Village governed by the Kipnuk Traditional Council, and;

WHEREAS, the cost of living is steeply increased by the location of our village in Remote Western Alaska, to include electricity, and;

WHEREAS, we are constantly trying to decrease the costs of producing electricity and increase efficiency for the benefit of our customers, and;

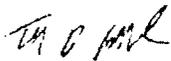
WHEREAS, the Chaninik Wind Group is being formed by the villages of Kipnuk, Kongiganak and Kwigillingok to carry forward these efforts.

NOW THEREFORE BE IT RESOLVED THAT the Native Village of Kipnuk and the Kipnuk Traditional Council supports the formation of the Chaninik Wind Group, and its efforts to apply for, secure and obtain funding to install wind turbines to reduce electrical costs in an environmental friendly manner, and;

BE IT FURTHER RESOLVED THAT the Native Village of Kipnuk will address the necessary issues to bring this project effort to fruition.

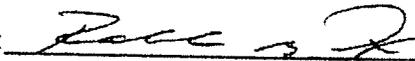
CERTIFICATION:

We, the undersigned, hereby certify that the Kipnuk Traditional Council is composed of seven (7) members, of whom four (4) constituting a quorum, were present at the duly meeting and held this 21st day of October, 2005, that the foregoing Resolution was duly passed and approved at said meeting by the affirmative vote of 7 members, opposed by 0, with 0 abstaining.



KTC PRESIDENT

ATTEST:



KTC SECRETARY

Tuntutuliak Community Services Association
TCSA Electrical Services

Resolution No. 01-08

**A RESOLUTION SUPPORTING ENERGY REDUCTION COST EFFORTS BY
INSTALLING WIND TURBINES THROUGH THE ESTABLISHMENT AND
EFFORTS OF CHANINIK WIND GROUP.**

WHEREAS; The Native Village of Tuntutuliak is a federally recognized Alaska Native Village governed by the Tuntutuliak Traditional Council, and

WHEREAS; The cost of living is steeply increased by the location of our villages in Remote Western Alaska, to include electricity, and

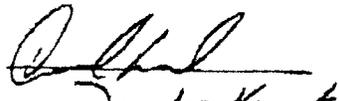
WHEREAS; We are constantly trying to decrease the cost of producing electricity and increase efficiency for the benefit of our consumers, and

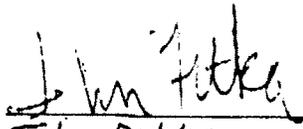
WHEREAS; The Chaninik Wind Group is being formed by the Villages of Kongiganak, Kwigillingok, Kipnuk and Tuntutuliak to carry forward these efforts.

NOW THEREFORE BE IT RESOLVED THAT; The Tuntutuliak Community Services Association (TCSA Electrical Services) will address the necessary issues to bring this project effort to fruition.

Certification:

The foregoing resolution was passed and approved by the duly convened meeting of the Tuntutuliak Community Services Association Board this 25th day of January, 2008 by vote of 4 Yes 0 No and 0 Abstaining.


Douglas Koraak
President


John Fitka
Secretary

NATIVE VILLAGE OF KWIGILLINGOK

Kwigillingok I.R.A. Council
P.O. Box 49
Kwigillingok, Alaska 99622-0049
(907) 588-8114/8212
(907) 588-8429-fax

RESOLUTION: 02-02-08

A RESOLUTION OF NATIVE VILLAGE OF KWIGILLINGOK TO APPLY FOR FUNDING TO DEVELOP A HIGH PENETRATION WIND-DIESEL PROJECT AND AUTHORIZING CHANINIK WIND GROUP TO REPRESENT NATIVE VILLAGE OF KWIGILLINGOK.

WHEREAS: The Native Village of Kwigillingok is a federally recognized Tribe in Alaska, and;

WHEREAS: The Kwigillingok I.R.A. Council is the governing body for the Native Village of Kwigillingok, and;

WHEREAS: The Native Village Of Kwigillingok is seeking ways to reduce energy costs, and dependency on fossil fuels with an interest in developing its wind resources, and;

WHEREAS: Village leaders recognize that by working closely with people and organizations that have been successful in designing, constructing and operating wind-diesel projects will largely determine the successful outcome of the project, and;

WHEREAS: Kwigillingok is a small community and is willing to develop a wind-diesel project, and;

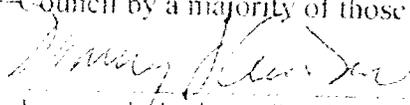
WHEREAS: Chaninik Wind Group is willing to assist Kwigillingok with the development, planning, design, construction and commissioning of a wind-diesel power system, and;

WHEREAS: William Igkurak and Dennis Meiners of Chaninik Wind Group are willing to represent this community in acquiring funds on behalf for such a project.

NOW THEREFORE BE IT RESOLVED THAT: The Kwigillingok I.R.A. Council, Native Village of Kwigillingok agrees to work with Chaninik Wind Group to develop a high penetration wind-diesel project for the Village, and;

BE IT FURTHER RESOLVED THAT: Chaninik Wind Group is authorized to seek funding and assistance for the community on their behalf.

The foregoing Resolution was passed at a duly convened meeting of the Kwigillingok I.R.A. Council by a majority of those present, this 31st Day of FEB, 2008.


Tommy J. Andrew, President


Warren P. Lewis, Secretary



January 22, 2008

William Igkurak
Chaninik Wind Group
PO Box 49
Kwigillingok, AK 99622

Ref: Wind Turbines for Kwigillingok

Dear William,

This letter is written to support the efforts and push forward the progress of getting Wind Turbines for the village of Kwigillingok through Chaninik Wind Group. It is very important that we get these turbines due to the high cost of fuel, which is also very unstable, and unpredictable. Wind Turbines with support of diesel generators to produce electricity is a proven fact in reducing fuel use, and which lowers cost to its consumers. Kwik Inc. and more importantly, the local village people will greatly benefit from lower electricity costs. As we all know, the high cost of fuel affects the cost of groceries, among others, which are essential in our daily lives.

People living in rural areas of Alaska are hit hardest by high fuel costs. Jobs are few and unemployment is very high. Any effort to reduce the high cost of fuel should be taken; it is of great importance in maintaining the harmony of the rural people of Alaska.

Sincerely,

Willie Atti
President, Kwik Incorporated

Cc: B.