

Agency: Commerce, Community and Economic Development

Grants to Named Recipients (AS 37.05.316)

Grant Recipient: Naknek Electric Association, Inc.

Federal Tax ID: 92-0027674

Project Title:

Project Type: Other

Naknek Electric Association, Inc. - Southwest Alaska Regional Geothermal Energy Project - Phase III

State Funding Requested: \$10,000,000

House District: 37 / S

Future Funding May Be Requested

Brief Project Description:

Naknek Electric Association, Inc is requesting \$10,000,000 capital project funds supporting Southwest Alaska Regional Geothermal Energy Project Phase III. Phase III tasks include the drilling and assessment of Naknek-G #1 and Naknek-G #2 for energy capacity, reservoir recharge, and communication characteristics of and between the demonstration doublet, information essential in the design, construction, and sustainability of a scalable generation facility.

Funding Plan:

Total Cost of Project: \$35,506,477

	<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>
Federal Funds	\$17,700,000	2009 - 2010	\$10,000,000	2011	\$50,000,000	2012 - 2015
State Funds					\$50,000,000	2012 - 2015
Denali Commission	\$325,000					
Local Funds	\$2,090,000	2000 - 2009			\$20,000,000	2012-2015
Other Funds	\$8,500,000	2009	\$15,000,000			
Total	\$28,615,000		\$25,000,000		\$120,000,000	

Explanation of Other Funds:

"Other Funds" Secured: NEA's 8,500,000 purchase of Drill Rig #7.

"Local Funds" Secured: NEA expenditures in excess of \$2,000,000 for project research and concept development.

\$15,000,000 in "Other Funds" Requested but not Secured: Renewable Energy Fund Round III Application submitted to the Alaska Energy Authority (AEA) was not recommended for funding despite positive appraisals by review panel members. Project management has formally requested "reconsideration".

Detailed Project Description and Justification:

\$10,000,000 in state funding is required for completing Phase III of the Southwest Alaska Regional Geothermal Energy Project. The federal government, through the US Department of Energy (DOE) has obligated \$17.7 million to the project. The majority of that amount, approximately \$12.3 million, was awarded competitively through DOE's Geothermal Technologies Program for the implementation of an EGS demonstration project. More than a demonstration project, for Southwest Alaska this project signals a geothermal initiative and helps define the region's geology, establishes thermal

\$2,000,000 Approved

gradient and EGS development potential for sustainable and scalable electric and heating generation.

Long-term and regional in scope NEA's Southwest Alaska Regional Geothermal Energy Project is a greenfield development in an underserved region of the state rich in natural resources. It is multi-phased and will enhance economic development, energy security and independence with clean indigenous, low-cost (over the life of the project), renewable, firm, stable and reliable geothermal energy. When the project is complete a 25 MW generation plant, scalable to 50 MW, and phased interconnection will serve 25 remote off-the-grid communities in the region. The project will significantly increase economies of scale and replace, not displace, the use of No. 1 and No. 2 diesel currently used in electric generation and home heating for a combined savings estimated at \$536,091,997 over a projected 20-year project life.

The federal government is looking ahead to a changed economy based on the the concept of "New Energy". NEA's project will advance energy security and independence and decrease environmental liability while expanding renewable energy sector business opportunities and employment for many Alaskans. It will serve as a bellwether in the transformation to a renewable energy economy nationally and regionally support ethical natural resource development in the "Sockeye Salmon Capital of the World" where the ex-vessel value of the region's sockeye salmon was worth over \$100,000,000. Lowering the cost of electricity will significantly improve local economies with cost-effective secondary processing opportunities, extended seasons and cold storage options for the seafood industry and local entrepreneurs.

Natural resources, geology, proximity to international shipping lanes and the region's emerging role in the international rush for control and exploitation of Arctic resources make Southwest Alaska an attractive region for geothermal project development, technology demonstration and infrastructure construction funding and financing.

Project Timeline:

Phase III well construction began in August 2009. It is anticipated that the construction and assessment of Naknek-G #1 and Naknek-G #2 will be completed in 2011. Information from the demonstration doublet must precede final generation facility design and is essential for long-term resource management and planning. All expenditures will be made on an accrual basis as construction proceeds and contractors complete work plans.

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

Naknek Electric Association, Inc through kWh sales revenue.

Grant Recipient Contact Information:

Name: Donna Vukich
 Address: PO Box 118
 Naknek, AK 99633
 Phone Number: 246-4261
 Email: dvukich@nea.coop

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

Southwest Alaska Regional Geothermal Energy Project Resource Benefits

Preliminary Geothermal Impact Analysis – First Year Full Operation - Energy Resource Economics

		Annual Energy MWh	Annual Cost \$000	NEA Avg. Rate ¢/kWh
Naknek Electric Distribution System Load	12 MW			
Annual Load Factor	20.5 %	21,550		
Annual Non-Fuel System Cost of Service			5,993	27.8
Annual Fuel Cost	15 kWh/gal			
	2.50 \$/gal		3,592	16.7
Naknek Average Cost per kWh (net of fuel)				11.1
Geothermal Plant Capacity	25 MW			
Plant Capacity Factor	85 %/yr	186,150		
Geothermal Cost: Nevada Facility	1.5 ¢/kWh			
Alaska Differential (times 2)	3.0 ¢/kWh	21,550	646	3.0
Naknek Average Cost per kWh (all energy geothermal)				14.1
Potential Wholesale Power Sales				
Net Available for Wholesale Energy	Gross MWh - NEA 30 % of avail.	164,600 49,380		
Margin Requirement (NEA)	10 %		148	0.7
Naknek Average Cost per kWh (after geothermal and wholesale power sales)				13.5
Other Revenues: Offset Fuel Oil Cost	4.00 \$/gal*			
	30.30 \$/MMBtu			
		B Btu		
Heat Load Residential Fuel Displaced	700 homes 100 gal/mo.	110.9	-3,360	
Heat Load Commercial Fuel Displaced	100 buildings 5000 gal/mo.	792.0	-6,000	
District Heat Loop Capital Cost (inc. conversion)	15 mi. 350 \$000/mi.			
Fixed Cost Recovery, 30 yr., 5%, \$000	342			
Operating Cost, 1% Capital Total Annual Cost	52.5 \$000/yr.		394	
Avoided Fuel Cost		902.9	-8,966	
Avoided Cost, Equivalent ¢/kWh*				-3.4
Naknek Net Average Cost per kWh (after credit for heat sales)				10.1

* 1 kWh = 3413 Btu

RATE COMPARISON

DIESEL VS. GEOTHERMAL GENERATED POWER

DIESEL

<u>CURRENT RATES</u>		
RESIDENTIAL:		
Consumer Charge	\$15.00	
First 1000 kwh	0.18	
Over 1000kwh	0.165	
Fuel Surcharge	0.2362	
COMMERCIAL:		
Consumer Charge	\$30.00	
Consumer Three Phase	\$60.00	
First 1000 kwh	0.18	
Over 1000kwh	0.165	
Fuel Surcharge	0.2362	
WHOLESALE:		
Minimum Bill	\$15,000.00	
All kwh	0.1363	
Fuel Surcharge	0.2362	
LARGE POWER:		
	YEAR-ROUND	SEASONAL
Consumer Charge	\$100.00	\$200.00
Demand per kw	\$10.00	\$12.00
All kwh	0.15	0.135
Fuel Surcharge	0.2362	0.2362

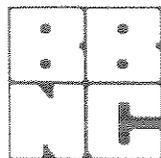
GEOTHERMAL

<u>EXAMPLE RATES</u>		
RESIDENTIAL:		
Consumer Charge	\$15.00	
All kwh	0.14	
COMMERCIAL:		
Consumer Charge	\$30.00	
Consumer Three Phase	\$60.00	
All kwh	0.14	
WHOLESALE:		
Minimum Bill	\$15,000.00	
All kwh	0.1363	
LARGE POWER:		
	YEAR-ROUND	SEASONAL
Consumer Charge	\$100.00	\$200.00
Demand per kw	\$ 8.00	\$10.00
All kwh	0.125	0.115

District Heating to further reduce use of No. 1 Diesel

<u>SAMPLE BILL</u>	
Residential 1000 kwhs w/ PCE	\$279.45
Commercial Single Phase	\$2,051.00
Commercial Three Phase 5000 kwhs	\$2,081.00
Large Power Year Round	\$38,496.00
Large Power Seasonal 80000 kwhs 750 kw	\$38,896.00

<u>SAMPLE BILL</u>	
Residential 1000 kwhs w/o PCE	\$155.00
Commercial Single Phase	\$730.00
Commercial Three Phase 5000 kwhs	\$760.00
Large Power Year Round	\$16,100.00
Large Power Seasonal 80000 kwhs 750 kw	\$16,900.00



Bristol Bay Native Corporation

Enriching Our Native Way of Life

111 W. 16th Avenue, Suite 400 / Anchorage, Alaska 99501-5109 / (907) 278-3602 / fax (907) 276-3924

November 17, 2009

Re: Letter of Support for Naknek Electric Association, Inc.
Southwest Alaska Regional Geothermal Energy Project

Bristol Bay Native Corporation (BBNC) recognizes NEA's leadership in planning and developing geothermal resources for the long-term energy needs in the region. On behalf of BBNC members I would like to convey our endorsement of the goals of the Southwest Alaska Regional Geothermal Energy Project and support for NEA's proposal to the Renewable Energy Fund Grant program for project investment to mitigate exploration and development costs.

Naknek Electric Association, Inc. (NEA) is developing a long-term energy project that will serve as a stepping stone to a regional geothermal power initiative for Southwest Alaska. The Bristol Bay region is culturally unique and rich in natural resources. Despite its bounty, the increasing and unpredictable cost of fossil fuel energy is destabilizing rural communities. Lowering the cost of energy will radically improve local economies, enhance resource development and preserve the culture.

Naknek Electric Association, Inc., as a microcosm of the region reflects these dire circumstances and is committed to lowering utility rates and the cost of living in the Bristol Bay Region. To that end the utility has begun characterizing; developing and testing the geothermal resource for production of utility scale electric, home heating and direct use applications. A phased transmission network will extend the benefits of indigenous, clean and renewable energy to the region. The project's phased generation and interconnection development will provide sustained "New Energy" jobs during construction and career employment opportunities in operations and maintenance throughout the life of the project.

Bristol Bay is considered the "Sockeye Salmon Capital of the World". The harvest, worth over \$100 million in 2009, is sustainable and lowering the cost of electricity will significantly improve economies with cost-effective local secondary processing, extended seasons and cold storage options for the seafood industry and local entrepreneurs.

Bristol Bay is poised both geographically and geologically for major economic productivity. Transforming natural resources like seafood, oil, gas and minerals, into globally viable market commodities locally, using geothermal energy will provide economic benefit to the region, state and the nation. Natural resources, geology, proximity to international shipping lanes and the region's emerging role in the international rush for control and exploitation of Arctic resources make Southwest Alaska an attractive region for geothermal development and the use of public funds for infrastructure development.

BBNC will continue to support economic development opportunities throughout Alaska and in the Bristol Bay region. In the end this type of project will help the Corporation to find benefit and fulfill our mission to Enrich the Native way of life for our shareholders.

Sincerely,

L. Tiel Smith
Resource Manager
Bristol Bay Native Corporation

BRISTOL BAY NATIVE ASSOCIATION

P.O. BOX 310

DILLINGHAM, ALASKA 99576

PHONE (907) 842-5257

November 6, 2009

Tribal Councils
Served by BBNA:

Aleknagik

Chignik Bay

Chignik Lagoon

Chignik Lake

Clarks Point

Curyung

Egegik

Ekuk

Ekwok

Igiugig

Iliamna

Ivanof Bay

Kanatak

King Salmon

Kokhanok

Koliganek

Levelock

Manokotak

Naknek

New Stuyahok

Newhalen

Nondalton

Olsonville

Pedro Bay

Perryville

Pilot Point

Port Heiden

Portage Creek

South Naknek

Togiak

Twin Hills

Ugashik

Re: Letter of Support for Naknek Electric Association, Inc.
Southwest Alaska Regional Geothermal Energy Project

Naknek Electric Association, Inc. (NEA) is developing a long-term energy project that will serve as a stepping stone to a regional geothermal power initiative for Southwest Alaska. The Bristol Bay region is culturally unique and rich in natural resources. Despite its bounty, the increasing and unpredictable cost of fossil fuel energy is destabilizing rural communities. Lowering the cost of energy will radically improve local economies, enhance resource development and preserve the culture.

Naknek Electric Association, Inc., as a microcosm of the region reflects these dire circumstances and is committed to lowering utility rates and the cost of living in the Bristol Bay Region. To that end the utility has begun characterizing, developing and testing the geothermal resource for production of utility scale electric, home heating and direct use applications. A phased transmission network will extend the benefits of indigenous, clean and renewable energy to the region. The project's phased generation and interconnection development will provide sustained "New Energy" jobs during construction and career employment opportunities in operations and maintenance throughout the life of the project.

Bristol Bay is considered the "Sockeye Salmon Capital of the World". The harvest, worth over \$100 million in 2009, is sustainable and lowering the cost of electricity will significantly improve economies with cost-effective local secondary processing, extended seasons and cold storage options for the seafood industry and local entrepreneurs.

Bristol Bay is poised both geographically and geologically for major economic productivity. Transforming natural resources like seafood, oil, gas and minerals, into globally viable market commodities locally, using geothermal energy will provide economic benefit to the region, state and the nation. Natural resources, geology, proximity to international shipping lanes and the region's emerging role in the international rush for control and exploitation of Arctic resources make Southwest Alaska an attractive region for geothermal development and the use of public funds for infrastructure development.

Energy independence, economic development, sustainability, and security are driving low-cost geothermal development. We cannot afford to do nothing. The challenge is regional, the idea is old, the risk is high, and the potential is tremendous.

Bristol Bay Native Association recognizes NEA's leadership in planning and developing geothermal resources for the long-term energy needs in the region. On behalf of BBNA members I would like to convey our endorsement of the goals of the Southwest Alaska Regional Geothermal Energy Project and support for NEA's proposal to the Renewable Energy Fund Grant program for project investment to mitigate exploration and development costs.

Sincerely,



Ralph Andersen
Chief Executive Officer



Resolution 07 - 02

A resolution of the Southwest Alaska Municipal Conference in support of Naknek Electric Association's Geothermal Energy Project

- WHEREAS, Southwest Alaska residents are currently facing energy costs that are threatening the health of their communities and these costs will continue to rise as long as diesel remains the primary source used to meet energy needs; and
- WHEREAS, The future of the fuel-based economy is unpredictable, subject to price gouges and wide ranging price fluctuations, especially when fuel supplies are threatened by natural or human forces; and
- WHEREAS, The **development** of Southwest Alaska's **Geothermal Energy** potential will provide a blanket to local communities that would insulate from such volatility and promote **reliable** and **clean** energy at **predictable** rates; and
- WHEREAS, Having predictable energy rates is essential for any community to maintain a healthy economy and promote economic development; and
- WHEREAS, The people of Southwest Alaska are desperately seeking short term financial relief from high energy costs and working to develop long term energy solutions; and
- WHEREAS, The **development** of Southwest Alaska's **Geothermal Energy** resources will **lower energy costs today** and **stabilize** them well into **the future**;
- NOW THEREFORE BE IT RESOLVED that the Board of Directors of the Southwest Alaska Municipal Conference support Naknek Electric Association in their efforts to measure and develop the local geothermal resource in order to bring affordable electricity and hot water to the Bristol Bay Region; and

- m o r e -

Section 1. Directs SWAMC staff to fully support NEA in their ongoing efforts; and

Section 2. Applauds the NEA Board of Directors and staff for their decision to develop a geothermal energy project in the Bristol Bay Region; and

Section 3. Encourages Southwest Alaska communities, businesses, and organizations to fully support the efforts underway to develop a geothermal project in the Bristol Bay Region;

PASSED AND ADOPTED by a duly constituted quorum of the Southwest Alaska Municipal Conference Board of Directors this 17th day of August 2006.

Signed:



Glen Gardner
President

Attest:



Wanetta Ayers
Executive Director

Submitted by: Energy Task Force
Reviewed by Board: August 17, 2006
Motion to Adopt: Joe Sullivan
Second: Linda Freed
Motion Passed
Ratified by Board: August 17, 2006

P.O. Box 189
NAKNEK, ALASKA 99633

www.theborough.com



TELEPHONE
(907) 246-4224
FAX
(907) 246-6633

Bristol Bay Borough

Bristol Bay Borough Planning & Zoning Commission RESOLUTION 01-2007

A RESOLUTION SUPPORTING NAKNEK ELECTRIC COOPERATIVE EXPLORATION FOR GEOTHERMAL ENERGY

WHEREAS, The Bristol Bay Borough is a regional hub community of 1,105 residents with a very large seasonal population, and;

WHEREAS, Bristol Bay Borough is the oldest borough and has maintained a goal of continuing to improve the standard of living for its residents, and;

WHEREAS, Bristol Bay Borough has a goal to encourage economic development by a more efficient use of existing natural resources, and;

WHEREAS, the current rate of electricity is relatively high which causes financial strain on families forcing them to consider relocating, and;

WHEREAS, less expensive electricity would increase economic development, ie: fishery processors, small business start ups, lodges, motels, etc.;

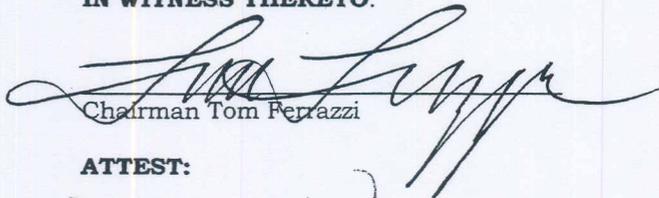
WHEREAS, Bristol Bay Borough Planning & Zoning Commission wants to find a sustainable energy source to secure the future for the children of the Borough, and;

WHEREAS, Bristol Bay Borough Planning & Zoning Commission has the responsibility to investigate subject matter for the betterment of the Borough and make recommendations, and;

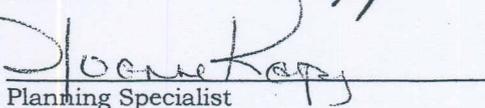
NOW THEREFORE BE IT RESOLVED, the Bristol Bay Borough Planning & Zoning Commission strongly supports Naknek Electric Cooperative's active exploration to find a geothermal energy source,

PASSED AND APPROVED by a duly constituted quorum of Bristol Bay Borough Planning & Zoning Commission this 9th day of JANUARY 2007.

IN WITNESS THERETO:


Chairman Tom Ferrazzi

ATTEST:


Planning Specialist

P.O. Box 189
NAKNEK, ALASKA 99633

www.theborough.com



TELEPHONE
(907) 246-42
FAX
(907) 246-66

Bristol Bay Borough

RESOLUTION #2008 - 12

A RESOLUTION in support of Naknek Electric Association's Geothermal Project

WHEREAS, Bristol Bay Borough residents are currently facing unbelievably high energy costs and these costs will continue to rise as long as diesel remains the primary source used to meet energy needs and ;

WHEREAS, The development of Southwest Alaska's **Geothermal Energy** potential will provide a blanket to local communities that would insulate from such volatility of energy costs and promote **reliable** and **clean** energy at **predictable** rates and;

WHEREAS, Bristol Bay Borough has a goal to encourage economic development by a more efficient use of existing natural resources, and having predictable energy rates is essential for any community to maintain a healthy economy less expensive electricity would increase economic development and;

WHEREAS, Bristol Bay Borough has maintained a goal of continuing to improve the standard of living for its residents and;

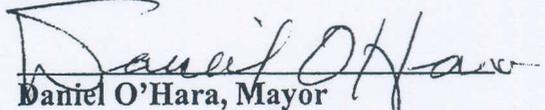
WHEREAS, the current rate of electricity is relatively high which causes financial strain on families forcing them to consider relocating, and;

WHEREAS, Bristol Bay Borough Assembly wants to find a sustainable energy source to secure the future for the children of the Borough, and;

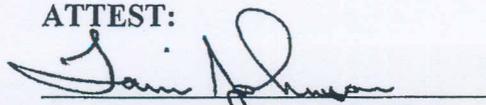
NOW THEREFORE BE IT RESOLVED, that the Bristol Bay Borough Assembly supports Naknek Electric Association in their efforts to measure and develop the local geothermal resource in order to bring affordable electricity and hot water to the Bristol Bay Region.

LET IT FUTHER BE RESOLVED, Applauds the NEA Board of Directors and staff for their decision to develop a geothermal energy project in the Bristol Bay Region and encourages Bristol Bay Borough villages, businesses, and organizations to fully support the efforts underway to develop a geothermal project in the Bristol Bay Region.

ADOPTED and approved, on this 6th day of October, 2008.


Daniel O'Hara, Mayor

ATTEST:


Tami Johnson, Borough Clerk