



# Renewable Energy Fund Round IV Grant Application

## Application Forms and Instructions

The following forms and instructions are provided to assist you in preparing your application for a Renewable Energy Fund Grant. An electronic version of the Request for Applications (RFA) and the forms are available online at: [http://www.akenergyauthority.org/RE\\_Fund-IV.html](http://www.akenergyauthority.org/RE_Fund-IV.html)

Grant Application Form	GrantApp4.doc	Application form in MS Word that includes an outline of information required to submit a complete application. Applicants should use the form to assure all information is provided and attach additional information as required.
Application Cost Worksheet	Costworksheet4.doc	Summary of Cost information that should be addressed by applicants in preparing their application.
Grant Budget Form	GrantBudget4.doc	A detailed grant budget that includes a breakdown of costs by milestone and a summary of funds available and requested to complete the work for which funds are being requested.
Grant Budget Form Instructions	GrantBudgetInstructions4.pdf	Instructions for completing the above grant budget form.

- If you are applying for grants for more than one project, provide separate application forms for each project.
- Multiple phases for the same project may be submitted as one application.
- If you are applying for grant funding for more than one phase of a project, provide milestones and grant budget for completion of each phase.
- If some work has already been completed on your project and you are requesting funding for an advanced phase, submit information sufficient to demonstrate that the preceding phases are satisfied and funding for an advanced phase is warranted.
- If you have additional information or reports you would like the Authority to consider in reviewing your application, either provide an electronic version of the document with your submission or reference a web link where it can be downloaded or reviewed.

### REMINDER:

- Alaska Energy Authority is subject to the Public Records Act [AS 40.25](#), and materials submitted to the Authority may be subject to disclosure requirements under the act if no statutory exemptions apply.
- All applications received will be posted on the Authority web site after final recommendations are made to the legislature.
- In accordance with [3 AAC 107.630](#) (b) Applicants may request trade secrets or proprietary company data be kept confidential subject to review and approval by the Authority. If you want information is to be kept confidential the applicant must:
  - Request the information be kept confidential.
  - Clearly identify the information that is the trade secret or proprietary in their application.
  - Receive concurrence from the Authority that the information will be kept confidential. If the Authority determines it is not confidential it will be treated as a public record in accordance with [AS 40.25](#) or returned to the applicant upon request.

<b>SECTION 1 – APPLICANT INFORMATION</b>		
<b>Name</b> <i>(Name of utility, IPP, or government entity submitting proposal)</i>		
City of False Pass Electric Utility		
<b>Type of Entity:</b>		
Local Government		
<b>Mailing Address</b> P.O. Box 50 False Pass, AK. 99583		<b>Physical Address</b> 100 Main Street False Pass, AK 99583
<b>Telephone</b> 907-548-2319	<b>Fax</b> 907-548-2214	<b>Email</b> cityoffalsepass@ak.net
<b>1.1 APPLICANT POINT OF CONTACT / GRANTS MANAGER</b>		
<b>Name</b> Ted Meyer		<b>Title</b> Community Development Coordinator
<b>Mailing Address</b> 3380 C Street, Suite 205 Anchorage, AK 99503-3952		
<b>Telephone</b> (907)274-7555	<b>Fax</b> (907)276-7569	<b>Email</b> tmeyer@aeboro.org
<b>1.2 APPLICANT MINIMUM REQUIREMENTS</b>		
<i>Please check as appropriate. If you do not to meet the minimum applicant requirements, your application will be rejected.</i>		
<b>1.2.1</b> As an Applicant, we are: <i>(put an X in the appropriate box)</i>		
	An electric utility holding a certificate of public convenience and necessity under AS 42.05, or	
	An independent power producer in accordance with 3 AAC 107.695 (a) (1), or	
<b>X</b>	A local government, or	
	A governmental entity (which includes tribal councils and housing authorities);	
<b>Yes</b>	1.2.2. Attached to this application is formal approval and endorsement for its project by its board of directors, executive management, or other governing authority. If the applicant is a collaborative grouping, a formal approval from each participant's governing authority is necessary. (Indicate Yes or No in the box )	
<b>Yes</b>	1.2.3. As an applicant, we have administrative and financial management systems and follow procurement standards that comply with the standards set forth in the grant agreement.	
<b>Yes</b>	1.2.4. If awarded the grant, we can comply with all terms and conditions of the attached grant form. (Any exceptions should be clearly noted and submitted with the application.)	
<b>Yes</b>	1.2.5 We intend to own and operate any project that may be constructed with grant funds for the benefit of the general public.	

**SECTION 2 – PROJECT SUMMARY**

*This is intended to be no more than a 1-2 page overview of your project.*

**2.1 Project Title – (Provide a 4 to 5 word title for your project)**

*Type in your answer here and follow same format for rest of the application.*

**False Pass Wind Energy Project**

**2.2 Project Location –**

*Include the physical location of your project and name(s) of the community or communities that will benefit from your project.*

False Pass is located on the eastern shore of Unimak Island on a strait connecting the Pacific Gulf of Alaska to the Bering Sea. It is 646 air miles southwest of Anchorage.

**2.3 PROJECT TYPE**

*Put X in boxes as appropriate*

**2.3.1 Renewable Resource Type**

<input checked="" type="checkbox"/>	Wind	<input type="checkbox"/>	Biomass or Biofuels
<input type="checkbox"/>	Hydro, including run of river	<input type="checkbox"/>	Transmission of Renewable Energy
<input type="checkbox"/>	Geothermal, including Heat Pumps	<input type="checkbox"/>	Small Natural Gas
<input type="checkbox"/>	Heat Recovery from existing sources	<input type="checkbox"/>	Hydrokinetic
<input type="checkbox"/>	Solar	<input type="checkbox"/>	Storage of Renewable
<input type="checkbox"/>	Other (Describe)		

**2.3.2 Proposed Grant Funded Phase(s) for this Request (Check all that apply)**

<input checked="" type="checkbox"/>	Reconnaissance	<input type="checkbox"/>	Design and Permitting
<input checked="" type="checkbox"/>	Feasibility	<input type="checkbox"/>	Construction and Commissioning
<input type="checkbox"/>	Conceptual Design	<input type="checkbox"/>	

**2.4 PROJECT DESCRIPTION**

*Provide a brief one paragraph description of your proposed project.*

False Pass currently produces all their electricity from diesel generators and heating from burning fossil fuels. Data from a met tower set up several years ago was compromised and has data gaps when bears damaged the equipment, but the data still may be useful if analyzed using appropriate assumptions and software. The wind resource may prove to be good, but we won't know until the data is analyzed and a wind resource report is completed. In addition, an avian study will determine if birds will be of concern and/or if mitigation measures are necessary.

This project seeks funding for analyzing the raw wind data and preparing a wind assessment report for False Pass. Based on wind assessment results/report a subsequent proposal may be submitted for conceptual design. In addition, an avian study will determine if migrating or nesting birds present concerns to a wind project and determine mitigation measures. The principal goals of baseline bird studies are to quantitatively describe the temporal and spatial use by birds of the study area and provide baseline information on avian species and their habitat sufficient to use in evaluating the probable impact of installation of a wind turbine. The specific

goals are to provide avian monitoring protocol training to local agent(s), collect avian data to determine bird activity at the delineated areas around the turbine site, record any dead or downed (injured) birds at the site that may be the result of collisions with the meteorological tower, and prepare avian monitoring reports including back-up information and complete avian data.

**2.5 PROJECT BENEFIT**

*Briefly discuss the financial and public benefits that will result from this project, (such as reduced fuel costs, lower energy costs, etc.)*

This project will reduce fuel and the overall energy costs to the False Pass community. False Pass currently produces all their electricity from diesel generators and heating from burning fossil fuels. Little biomass is currently available to offset home heating and hydro in the local streams and solar energy do not seem practical in False Pass, but the wind resource may prove to be good. Based on surveys of local community members False Pass has good wind and the report may support these survey results.

The estimated annual electricity savings, based on the use of a couple 10KW turbines will be 27,120kWh. This will translate into a financial savings of \$7,594 per year (estimated at \$0.28/kWh). Larger wind turbines will provide more power and more savings, but improvements to the electrical utility would be necessary; this will be investigated if this project is funded.

Other project benefits will include:

- Reduced dependence on diesel fuel and the expense involved in its transportation and storage.
- Save on current operation and maintenance costs by less time from using diesel generators
- Contribute to the reduction of air pollution and affects on climate change.

**2.6 PROJECT BUDGET OVERVIEW**

*Briefly discuss the amount of funds needed, the anticipated sources of funds, and the nature and source of other contributions to the project.*

The estimated Phase I Reconnaissance cost of this project is \$74,075, Phase II Feasibility is \$64,550. The project cost total is \$138,625. Aleutians East Borough staff time will contribute in-kind to this project for project administration and management (\$10,000). The total requested is \$128,875.

**2.7 COST AND BENEFIT SUMMARY**

*Include a summary of grant request and your project's total costs and benefits below.*

**Grant Costs**

***(Summary of funds requested)***

<b>2.7.1 Grant Funds Requested in this application.</b>	<b>\$128,625</b>
<b>2.7.2 Other Funds to be provided (Project match)</b>	<b>\$10,000</b>
<b>2.7.3 Total Grant Costs (sum of 2.7.1 and 2.7.2)</b>	<b>\$138,625</b>

**Project Costs & Benefits**

<i>(Summary of total project costs including work to date and future cost estimates to get to a fully operational project)</i>	
<b>2.7.4 Total Project Cost (Summary from Cost Worksheet including estimates through construction)</b>	<b>\$ not available</b>
<b>2.7.5 Estimated Direct Financial Benefit (Savings)</b>	<b>\$ not available</b>
<b>2.7.6 Other Public Benefit (If you can calculate the benefit in terms of dollars please provide that number here and explain how you calculated that number in your application (Section 5.))</b>	<b>\$ not available</b>

## Alternative Energy Resources

### Wind Diesel Hybrid

Installed KW	200	Capital cost	\$1,760,485	per kW-hr	Heat Cost \$/MMBtu :
kW-hr/year	406290	Annual Capital	\$118,332	\$0.29	\$85.34
Met Tower?	no	Annual OM	\$19,062	\$0.05	\$13.75
Homer Data?	yes	Fuel cost:	\$0	\$0.00	
Wind Class	7	Total Annual Cost	\$137,394	\$0.34	\$99.08
Avg wind speed	8.50 m/s	Non-Fuel Costs	\$0.07		
		Alternative COE:	\$0.40		
		% Community energy	180%		<b>Savings</b>
		New Community COE	\$0.68		<b>(\$58,999)</b>
		<small>(includes non-fuel and diesel costs)</small>			

### Diesel Engine Heat Recovery

Heat Recovery System Installed?	Y	Capital cost	\$72,009		
Is it working now?	Y	Annual ID	\$6,032		
BLDGs connected and working:		Annual OM	\$1,440		
<b>Powerhouse Only</b>		Total Annual costs	\$7,472		<b>Savings</b>
Water Jacket	2,068 gal	Value	\$11,615		
Stack Heat	0 gal		\$0	Heat cost	\$32.70 \$/MMBtu
					<b>\$4,143</b>

## SECTION 3 – PROJECT MANAGEMENT PLAN

*Describe who will be responsible for managing the project and provide a plan for successfully completing the project within the scope, schedule and budget proposed in the application.*

### 3.1 Project Manager

Tell us who will be managing the project for the Grantee and include contact information, a resume and references for the manager(s). If the applicant does not have a project manager indicate how you intend to solicit project management support. If the applicant expects project management assistance from AEA or another government entity, state that in this section.

The Aleutians East Borough uses a team approach in project management and development. AEB staff maintains routine communications with False Pass City staff in all aspects of community development and projects. This close contact and coordination will continue in the False Pass Wind Power Project. The False Pass City Council has authorized the AEB to provide overall project administration and management of this project. Upon project funding, the AEB will select and work with Marsh Creek as the design and construction management consultants to initiate, oversee, and complete the project.

Aleutian East Borough Project Management staff includes:

- Sharon Boyette, Administrator  
907-274-7555, [sboyette@aeboro.org](mailto:sboyette@aeboro.org)
- Ted Meyer, Community Development Coordinator  
907-274-7555, [tmeyer@aeboro.org](mailto:tmeyer@aeboro.org)
- Roxann Newman, Finance Director.  
907-497-2588, [rnewman@aeboro.org](mailto:rnewman@aeboro.org)

Attached are their resumes.

### 3.2 Project Schedule

Include a schedule for the proposed work that will be funded by this grant. (You may include a chart or table attachment with a summary of dates below.)

See Project Milestones table below for Project Schedule.

### 3.3 Project Milestones

Define key tasks and decision points in your project and a schedule for achieving them. The Milestones must also be included on your budget worksheet to demonstrate how you propose to manage the project cash flow. (See Section 2 of the RFA or the Budget Form.)

Project Milestones	Reimbursable Tasks	Timeline
<b>Phase I. Reconnaissance</b>		
<ul style="list-style-type: none"> <li>• Project Scoping and <b>Community Solicitation</b></li> </ul>	<ul style="list-style-type: none"> <li>• Project Management</li> <li>• Establish avian monitoring needs for area as suggested by USFWS</li> <li>• MC Team will travel to community for site assessment and to visit the school to introduce the project to Staff/Students/Community and solicit participation i.e. Introduce Wind for Schools, provide information about training opportunities for wind-diesel system operations, and solicit volunteers for avian monitoring (this task will be completed concurrently with the Preliminary Site Visit funded in the next milestone – no additional funding added for this milestone in budget)</li> </ul>	8/1/11 to 10/31/11
<ul style="list-style-type: none"> <li>• Resource Identification and Analysis</li> </ul>	<ul style="list-style-type: none"> <li>• Project Management</li> <li>• Preliminary site visit</li> <li>• Contract for wind data analysis</li> <li>• FAA Approval for met tower on selected site(s)</li> <li>• Determine point of contact and train local</li> </ul>	9/1/11 to 10/31/12

	<ul style="list-style-type: none"> <li>agents to conduct avian observations</li> <li>Gather avian observations</li> </ul>	
<ul style="list-style-type: none"> <li>Land use, permitting, and environmental analysis</li> </ul>	<ul style="list-style-type: none"> <li>Project Management</li> <li>Determine site ownership issues, if any</li> <li>Contact agencies for preliminary approval: SHPO, DOD, ACMP</li> <li>Document, if any, community concerns with sight and sound at chosen location</li> </ul>	9/1/11 to 10/31/11
<ul style="list-style-type: none"> <li>Preliminary design analysis and cost</li> </ul>	<ul style="list-style-type: none"> <li>Project Management</li> <li>Utilize Wind Resource Report to identify optimal wind turbines and configuration – 4 types are currently under consideration: Remanufactured Vestas V-27 North Wind 100 Nordtank 300kW Wind Micon M530-250W</li> </ul>	10/1/12 to 11/30/12
<ul style="list-style-type: none"> <li>Cost of energy and market analysis</li> </ul>	<ul style="list-style-type: none"> <li>Project Management</li> <li>Assess cost of energy for current and predicted usage</li> </ul>	10/1/12 to 11/30/12
<ul style="list-style-type: none"> <li>Simple economic analysis</li> </ul>	<ul style="list-style-type: none"> <li>Project Management</li> <li>Compare current vs. predicted price of energy</li> </ul>	10/1/12 to 11/30/12
<ul style="list-style-type: none"> <li>Final report and recommendations</li> </ul>	<ul style="list-style-type: none"> <li>Project Management</li> <li>Prepare Wind Resource Report and Present to School /Community along with options for development. Solicit input from community and interest in training for wind-diesel O&amp;M</li> </ul>	11/1/12 to 12/31/12
<b>Phase II. Feasibility</b>		
<ul style="list-style-type: none"> <li>Project scoping and community solicitation</li> </ul>	<ul style="list-style-type: none"> <li>Project Management</li> <li>Assess interest for advanced training in wind-diesel O&amp;M</li> <li>Provide School information about vocational training opportunities in wind-diesel O&amp;M</li> </ul>	8/1/11 to 9/30/11
<ul style="list-style-type: none"> <li>Detailed energy resource analysis</li> </ul>	<ul style="list-style-type: none"> <li>Project Management</li> <li>Evaluate existing diesel power plant, electrical distribution system, and geotechnical data</li> <li>Evaluate condition and acceptability of existing controls and switchgear for compatibility with a wind system</li> </ul>	8/1/12 to 12/31/12
<ul style="list-style-type: none"> <li>Identification of land and regulatory issues</li> </ul>	<ul style="list-style-type: none"> <li>Project Management</li> <li>Address site ownership and regulatory issues, if any</li> </ul>	9/1/11 to 10/31/11
<ul style="list-style-type: none"> <li>Permitting and</li> </ul>	<ul style="list-style-type: none"> <li>Project Management</li> </ul>	9/1/11 to 12/31/12

environmental analysis	<ul style="list-style-type: none"> <li>• Contact USFWS, FAA, DOD, ACMP, and SHPO for approval of conceptual design</li> <li>• Assess and document any issues with wetlands or telecommunications, including mitigation efforts planned if necessary</li> <li>• Document community sentiment regarding visual or sound issues</li> </ul>	
<ul style="list-style-type: none"> <li>• Detailed analysis of existing and future energy costs and markets</li> </ul>	<ul style="list-style-type: none"> <li>• Project Management</li> <li>• Review historical power plant and electrical consumption data</li> <li>• Identify building candidates for heat recovery</li> <li>• Identify planned or proposed future growth load for community</li> </ul>	11/1/12 to 12/31/12
<ul style="list-style-type: none"> <li>• Assessment of Alternatives</li> </ul>	<ul style="list-style-type: none"> <li>• Project Management</li> <li>• Compare productivity of different wind turbines and configurations for local wind regime. Consider penetration level benefits vs complexity.</li> <li>• Compare and contrast complicity of equipment and wind penetration systems with capacity and interest of community to operate and maintain</li> <li>• Provide community with clear picture of options available to them for wind-diesel power production – solicit input into decision</li> </ul>	11/1/12 to 12/31/12
<ul style="list-style-type: none"> <li>• Conceptual design analysis and cost estimate</li> </ul>	<ul style="list-style-type: none"> <li>• Project Management</li> <li>• Include design of heat recovery system utilizing engine jacket heat combined with excess electricity from wind energy in wind-diesel power plant design</li> </ul>	11/1/12 to 12/31/12
<ul style="list-style-type: none"> <li>• Detailed economic and financial analysis</li> </ul>	<ul style="list-style-type: none"> <li>• Project Management</li> <li>• Calculate rate for electricity that displaces diesel through the heat recovery system</li> </ul>	11/1/12 to 12/31/12
<ul style="list-style-type: none"> <li>• Conceptual business and operations plans</li> </ul>	<ul style="list-style-type: none"> <li>• Project Management</li> <li>• Business and Operations Plan developed for wind-diesel power plant w/heat recovery system with participation from community. Meet with utility board to discuss and formalize.</li> </ul>	11/1/12 to 12/31/12
<ul style="list-style-type: none"> <li>• Final report and recommendations</li> </ul>	<ul style="list-style-type: none"> <li>• Project Management</li> <li>• Community Meeting to Present Plan and Announce Training Opportunities</li> <li>• Final Grant Report to AEA</li> </ul>	11/1/12 to 3/30/13

### 3.4 Project Resources

Describe the personnel, contractors, equipment, and services you will use to accomplish the project. Include any partnerships or commitments with other entities you have or anticipate will be needed to complete your project. Describe any existing contracts and the selection process you may use for major equipment purchases or contracts. Include brief resumes and references for known, key personnel, contractors, and suppliers as an attachment to your application.

The Aleutians East Borough staff will be responsible for implementation and successful completion of the project. The AEB will confer routinely with the False Pass City staff while simultaneously working with qualified consultants (Marsh Creek LLC and V3 Energy) to develop and complete the project.

The AEB will follow its procurement and bid policies as far as selecting firms and purchasing equipment, supplies, and materials. Selection of consultant and contractors will be based on the type and amount of past wind project experience of the firm as well as individual work experience, experience and familiarity in the AEB region, and project cost.

### 3.5 Project Communications

Discuss how you plan to monitor the project and keep the Authority informed of the status.

The AEB Community Development Coordinator will be the project liaison and contact person among all parties (City of False Pass staff, Marsh Creek LLC, general contractors, vendors, and the AEA). The position will help coordinate all project team communications, meetings, and disseminate information on a routine basis. The coordinator will be responsible for all periodic progress reports and other information requests to the AEA. AEB will work closely with the selected contractors and keep the AEA informed of progress by regular e-mail updates as components of the project are completed. The contractor's interim and final reports will be submitted promptly when completed. Close liaison will be maintained with the contractors throughout the project. Issues to be tracked include scope clarifications, progress relative to budget, schedule, data recovery, and health and safety. These will include the project matching funds.

### 3.6 Project Risk

Discuss potential problems and how you would address them.

There are potential problems in project logistics and construction in remote areas such as Aleutians East Borough communities. Adverse weather conditions can also cause project delays.

Aleutians East Borough staff has much experience in setting up and managing community development projects in AEB communities. Similarly, local labor has much experience, savvy, and know-how to get the job done in adverse conditions such as poor weather. Good team planning and reliance on local knowledge about community conditions help reduce the risk in development projects in remote areas.

The U.S. Fish and Wildlife Service was consulted about avian and environmental concerns.

Endangered waterfowl use the area so avian studies will be necessary. Transmission lines may pose a threat to birds, and the avian study will consider that and make recommendations if the cables should be buried or not.

## SECTION 4 – PROJECT DESCRIPTION AND TASKS

- *Tell us what the project is and how you will meet the requirements outlined in Section 2 of the RFA.*
- ***The level of information will vary according to phase(s) of the project you propose to undertake with grant funds.***
- ***If you are applying for grant funding for more than one phase of a project provide a plan and grant budget form for completion of each phase.***
- *If some work has already been completed on your project and you are requesting funding for an advanced phase, submit information sufficient to demonstrate that the preceding phases are satisfied and funding for an advanced phase is warranted.*

### 4.1 Proposed Energy Resource

Describe the potential extent/amount of the energy resource that is available.

Discuss the pros and cons of your proposed energy resource vs. other alternatives that may be available for the market to be served by your project.

False Pass may have class 5 wind (see preliminary report table and figures below), and the wind resource could exceed the community's electrical energy needs when the wind is blowing. Additional analysis of these data is necessary for determining the quality of wind in False Pass.

Report Created: 8/12/2010 14:22 using Windographer 2.0.4

Filter Settings: <Unflagged data>

Variable Value

Latitude N 54° 52' 0.000"

Longitude W 163° 25' 0.000"

Elevation 17 m

Start date 12/1/2005 00:00

End date 9/4/2007 12:00

Duration 21 months

Length of time step 10 minutes

Calm threshold 0 m/s

Mean temperature 5.55 °C

Mean pressure 101.1 kPa

Mean air density 1.264 kg/m<sup>3</sup>

Power density at 50m 531 W/m<sup>2</sup>

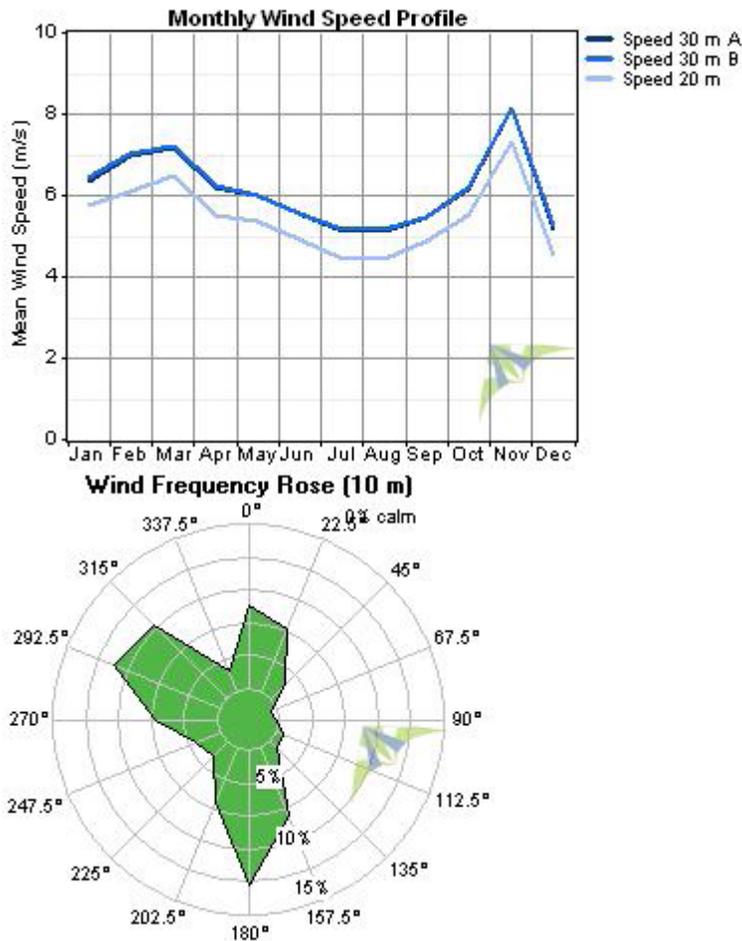
Wind power class 5 (Excellent)

Power law exponent 0.303

Surface roughness 0.904 m

Roughness class 3.83

Roughness description Suburban



## 4.2 Existing Energy System

### 4.2.1 Basic configuration of Existing Energy System

Briefly discuss the basic configuration of the existing energy system. Include information about the number, size, age, efficiency, and type of generation.

The City of False Pass owns and operates the False Pass Electrical Utility. The electric utility serves 21 residential, 11 commercial, one state facility, and nine community facilities customers.

There are three John Deere diesel generators used for power generation. Generator #1 has a rated capacity of 90 kW, generator #2 has a capacity of 125kW, and Generator #3 has a capacity 150 kW. The peak load is 75 kW with an average load of 49kW. The community has used an average of 47,000 gallons per year of diesel #2 for electrical generation for the last two years. The utility's power distribution system is all underground 3-phase wire operating at 12,470 volts grounded Y.

### 4.2.2 Existing Energy Resources Used

Briefly discuss your understanding of the existing energy resources. Include a brief discussion of any impact the project may have on existing energy infrastructure and resources.

The False Pass Power Plant produces electrical energy by burning diesel fuel in engine-driven generators. This satisfies a community power consumption of approximately 384,699 kWh per year. This consumption does not include power that is used to operate the power plant, or power lost in distribution. By integrating wind power into the existing system, our goal is to generate the same amount of energy output, using substantially less fuel than is currently being used.

#### **4.2.3 Existing Energy Market**

Discuss existing energy use and its market. Discuss impacts your project may have on energy customers.

False Pass is located on the eastern shore of Unimak Island on a strait connecting the Pacific Gulf of Alaska to the Bering Sea. It is 646 air miles southwest of Anchorage and accessible only by air and barge transportation. The community experiences long and cold winter nights, and severe winter storms can be continuous.

Existing power consumption is approximately 384,699 kWh per year. Reliable power service is essential for airport lights (especially in winter), the health clinic, school, government, tribal, and corporation buildings and facilities, harbor utilities, the Bering Pacific Seafood Plant, commercial enterprises, and residences.

Wind power will ultimately help stabilize or even lower monthly electricity costs which keep increasing due to the reliance of fuel for power generation.

#### **4.3 Proposed System**

Include information necessary to describe the system you are intending to develop and address potential system design, land ownership, permits, and environmental issues.

##### **4.3.1 System Design**

Provide the following information for the proposed renewable energy system:

- A description of renewable energy technology specific to project location
- Optimum installed capacity
- Anticipated capacity factor
- Anticipated annual generation
- Anticipated barriers
- Basic integration concept
- Delivery methods

A design of a wind-generator hybrid system will depend upon the wind assessment report findings. Vertical axis turbine(s) may be more appropriate for this site.

##### **4.3.2 Land Ownership**

Identify potential land ownership issues, including whether site owners have agreed to the project or how you intend to approach land ownership and access issues.

There are a couple of potential wind turbine sites located at the city shop and the city power building. The City is agreeable to a potential wind turbine project being sited on their land.

**4.3.3 Permits**

Provide the following information as it may relate to permitting and how you intend to address outstanding permit issues.

- List of applicable permits
- Anticipated permitting timeline
- Identify and discussion of potential barriers

Potential permits required of the project include:

**Threatened Species (U.S. Fish & Wildlife)**

The USFWS is concerned about bird kills caused by birds flying into wind turbines, towers and guy wires. They have not adopted a formal position against installing wind turbines. In fact, the USFWS is in the process of installing vertical axis wind turbines at their complex in the AEB community of Cold Bay. The USFWS staff in Cold Bay has expressed the position that at potential wind turbine sites the flight patterns of birds should be assessed before turbine installation so that bird kills can be minimized.

**Aviation Considerations (FAA).**

Because of the proximity of the False Pass Airport to potential wind turbine sites in town, there may be need to make a hazard determination of the turbine site in relation to the runway.

**Telecommunication Impacts (National Communications Information Administration and the National Weather Service)**

Wind turbines may interfere with communications signals by generating electromagnetic noise and/or creating physical obstructions that distort communications signals.

**4.3.4 Environmental**

Address whether the following environmental and land use issues apply, and if so how they will be addressed:

- Threatened or Endangered species
- Habitat issues
- Wetlands and other protected areas
- Archaeological and historical resources
- Land development constraints
- Telecommunications interference
- Aviation considerations
- Visual, aesthetics impacts
- Identify and discuss other potential barriers

- Land development constraints

As all identified land owners are agreeable to a potential wind turbine located on their property, the only potential land development constraints may arise from site location issues with:

- Threatened or Endangered species (U.S. Fish & Wildlife)
- Telecommunications interference (National Communications Information Administration and the National Weather Service)
- Aviation considerations (FAA)

Potential permit issues with the above will be addressed early in the project development process.

#### 4.4 Proposed New System Costs and Projected Revenues

##### (Total Estimated Costs and Projected Revenues)

The level of cost information provided will vary according to the phase of funding requested and any previous work the applicant may have done on the project. Applicants must reference the source of their cost data. For example: Applicants Records or Analysis, Industry Standards, Consultant or Manufacturer's estimates.

##### 4.4.1 Project Development Cost

Provide detailed project cost information based on your current knowledge and understanding of the project. Cost information should include the following:

- Total anticipated project cost, and cost for this phase
- Requested grant funding
- Applicant matching funds – loans, capital contributions, in-kind
- Identification of other funding sources
- Projected capital cost of proposed renewable energy system
- Projected development cost of proposed renewable energy system

From the Alaska Energy Authority reports (see excerpts below) a total project costs would be under \$2M.

### Alternative Energy Resources

<b>Wind Diesel Hybrid</b>		Capital cost	\$1,760,485	per kW-hr	Heat Cost \$/MMBtu :
Installed KW	200	Annual Capital	\$118,332	\$0.29	\$85.34
kW-hr/year	406290	Annual OM	\$19,062	\$0.05	\$13.75
Met Tower?	no	Fuel cost:	\$0	\$0.00	
Homer Data?	yes	Total Annual Cost	\$137,394	\$0.34	\$99.08
Wind Class	7	Non-Fuel Costs	\$0.07		
Avg wind speed	8.50 m/s	<b>Alternative COE:</b>	<b>\$0.40</b>		
		% Community energy	180%		<b>Savings</b>
		New Community COE	\$0.68		<b>(\$58,999)</b>
		<small>(includes non-fuel and diesel costs)</small>			

### Diesel Engine Heat Recovery

Heat Recovery System Installed?	Y	Capital cost	\$72,009		
Is it working now?	Y	Annual ID	\$6,032		
BLDGs connected and working:		Annual OM	\$1,440		
<b>Powerhouse Only</b>					
		Value		Total Annual costs	\$7,472
Water Jacket	2,068 gal	\$11,615		Heat cost	\$32.70 \$/MMBtu
Stack Heat	0 gal	\$0			<b>\$4,143</b>
					<b>Savings</b>

This phase of the project (this proposal) total cost is \$138,625 with \$10,000 matching. We anticipate securing some funding from the federal government for this project which would require good avian study and environmental data and reporting. Based on the economic findings we will investigate the use of loans and capital contributions.

#### 4.4.2 Project Operating and Maintenance Costs

Include anticipated O&M costs for new facilities constructed and how these would be funded by the applicant.

*(Note: Operational costs are not eligible for grant funds however grantees are required to meet ongoing reporting requirements for the purpose of reporting impacts of projects on the communities they serve.)*

AEA estimated the O & M costs for a Wind—Diesel system in False Pass to be \$19,062. Currently the O & M costs at the diesel plant are not recoverable. The city is unable to charge an energy rate that will cover the O & M costs because the customers can not afford energy at that cost. A more accurate estimate of Wind-Diesel O & M costs will be developed by the Wind Study. Combining wind into the diesel system will allow the Utility to keep energy pricing affordable to residents without losing money on its O & M costs.

### Alternative Energy Resources

<b>Wind Diesel Hybrid</b>		Capital cost	\$1,760,485	per kW-hr	Heat Cost \$/MMBtu :
Installed KW	200	Annual Capital	\$118,332	\$0.29	\$85.34
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		% Community energy	180%		<b>Savings</b>
		New Community COE	\$0.68		<b>(\$58,999)</b>
		<small>(includes non-fuel and diesel costs)</small>			

#### 4.4.3 Power Purchase/Sale

The power purchase/sale information should include the following:

- Identification of potential power buyer(s)/customer(s)
- Potential power purchase/sales price - at a minimum indicate a price range
- Proposed rate of return from grant-funded project

The Wind Study will identify power/purchase sale information accurately. AEA estimates that Wind-Diesel cost of energy as potentially \$0.83 per kWh.

The AEP has provided the potential cost range of power from a wind-diesel system. The cost of displaced fuel will be used as a pricing method for False Pass.

**Table 3-4. Wind System Cost Range – Rural Alaska Reconnaissance**

	Capital Cost (\$/kW)		Operating Cost (\$/turbine/yr)		Total Cost (\$/kWh)	
	Low	High	Low	High	Low	High
Low Wind Penetration	\$2200		\$2600		\$0.10	
High Wind Penetration		\$3600		\$60,000		\$0.28
DOE Small (< 40kW) Wind Turbine Verification Project Cost Targets <sup>40</sup>					\$0.38	\$0.60

Source: Section 2.1.6 Characterization of Existing Technology Deployed in Alaska

#### 4.4.4 Project Cost Worksheet

Complete the cost worksheet form which provides summary information that will be considered in evaluating the project.

*Download the form, complete it, and submit it as an attachment. Document any conditions or sources your numbers are based on here.*

MarshCreek LLC provided the costs for the wind study and pricing for wind turbines. Sources cited for potential wind energy savings and costs came from the AEP document downloaded from the AEA site.

#### SECTION 5– PROJECT BENEFIT

***Explain the economic and public benefits of your project. Include direct cost savings, and how the people of Alaska will benefit from the project.***

The benefits information should include the following:

- Potential annual fuel displacement (gal and \$) over the lifetime of the evaluated renewable energy project
- Anticipated annual revenue (based on i.e. a Proposed Power Purchase Agreement price, RCA tariff, or cost based rate)
- Potential additional annual incentives (i.e. tax credits)
- Potential additional annual revenue streams (i.e. green tag sales or other renewable energy subsidies or programs that might be available)
- Discuss the non-economic public benefits to Alaskans over the lifetime of the project

According to the AEP study, False Pass has the potential to save over \$58,000 or over 10,000 gallons in displaced fuel annually. There have been no Proposed Power Purchase Agreement price, RCA tariff, or cost based rates for the proposed wind-diesel system developed at this time.

The people of False Pass would like to be less dependent on the variable price of diesel fuel, lessen the environmental risks of fuel transport and storage hazards by requiring less diesel fuel to power their community.

**SECTION 6– SUSTAINABILITY**

Discuss your plan for operating the completed project so that it will be sustainable.

Include at a minimum:

- Proposed business structure(s) and concepts that may be considered.
- How you propose to finance the maintenance and operations for the life of the project
- Identification of operational issues that could arise.
- A description of operational costs including on-going support for any back-up or existing systems that may be require to continue operation
- Commitment to reporting the savings and benefits

The City of False Pass Electric Utility currently operates the power plant and electrical distribution system in False Pass. The Utility will incorporate an O & M surcharge into its rate structure to recoup the costs of operating and maintaining the renewable energy infrastructure. Actual O & M costs will be determined once specifications are developed for the wind turbines to be installed as a result of this study.

There will be a learning curve in operating the proposed wind-diesel system. Adequate training and support will be budgeted during additional phases. Selection of the wind turbine system will take into account surrounding communities systems already in existence. This will positively contribute to the wind market penetration to support trained personnel.

**SECTION 7 – READINESS & COMPLIANCE WITH OTHER GRANTS**

Discuss what you have done to prepare for this award and how quickly you intend to proceed with work once your grant is approved.

Tell us what you may have already accomplished on the project to date and identify other grants that may have been previously awarded for this project and the degree you have been able to meet the requirements of previous grants.

The Aleutians East Borough was awarded a \$25,000 grant from the Alaska Energy Authority on July 27, 2009 to perform a renewable energy resource feasibility study for the communities of Cold Bay, False Pass, and Nelson Lagoon (the AEB contributed \$5,000 cash and \$10,000 in-kind to the project). The study project was completed on May 18, 2010 and submitted to the AEA on June 2, 2010. The study contains an analysis of existing energy power systems, potential renewable energy resources, and recommendations for renewable energy projects in the three communities. The study provides the basis for much of the information contained in this grant.

The City of False Pass and the Aleutians East Borough are currently receiving assistance from the Aleutian Pribilof Island Association and Marsh Creek, Inc. to follow-up on the project recommendations contained in the completed Renewable Energy Feasibility Study. Specifically, we are refining the type of equipment specified in the plan as well as developing work plans for project implementation. This work also provides the basis for much of the information in this application. With this additional work – completion of the avian and the feasibility studies, the City of False Pass Electrical Utility will be ready to proceed immediately.

**SECTION 8– LOCAL SUPPORT**

Discuss what local support or possible opposition there may be regarding your project. Include letters of support from the community that would benefit from this project.

The False Pass City Council and the Aleutians East Borough Assembly both passed resolutions in public meetings in support of the False Pass Electric Utility’s Renewable Energy Fund Round IV Grant, entitled, “False Pass Renewable Energy Wind Project”. Please see the enclosed two resolutions.

**SECTION 9 – GRANT BUDGET**

*Tell us how much you want in grant funds Include any investments to date and funding sources, how much is being requested in grant funds, and additional investments you will make as an applicant.*

*Include an estimate of budget costs by milestones using the form – GrantBudget3.doc*

*Provide a narrative summary regarding funding sources and your financial commitment to the project.*

The expected cost of the feasibility study is \$138,625. The Grant Budget Form is attached.

**SECTION 9 – ADDITIONAL DOCUMENTATION AND CERTIFICATION**  
**SUBMIT THE FOLLOWING DOCUMENTS WITH YOUR APPLICATION:**

- A. Contact information, resumes of Applicant’s Project Manager, key staff, partners, consultants, and suppliers per application form Section 3.1 and 3.4.
- B. Cost Worksheet per application form Section 4.4.4.
- C. Grant Budget Form per application form Section 9.
- D. Letters demonstrating local support per application form Section 8.
- E. An electronic version of the entire application on CD per RFA Section 1.6.
- F. Authorized Signers Form.
- G. Governing Body Resolution or other formal action taken by the applicant’s governing body or management per RFA Section 1.4 that:
  - Commits the organization to provide the matching resources for project at the match amounts indicated in the application.
  - Authorizes the individual who signs the application has the authority to commit the organization to the obligations under the grant.
  - Provides as point of contact to represent the applicant for purposes of this application.
  - Certifies the applicant is in compliance with applicable federal, state, and local, laws including existing credit and federal tax obligations.
- H. CERTIFICATION

<b>The undersigned certifies that this application for a renewable energy grant is truthful and correct, and that the applicant is in compliance with, and will continue to comply with, all federal and state laws including existing credit and federal tax obligations.</b>	
<b>Print Name</b>	
<b>Signature</b>	
<b>Title</b>	
<b>Date</b>	