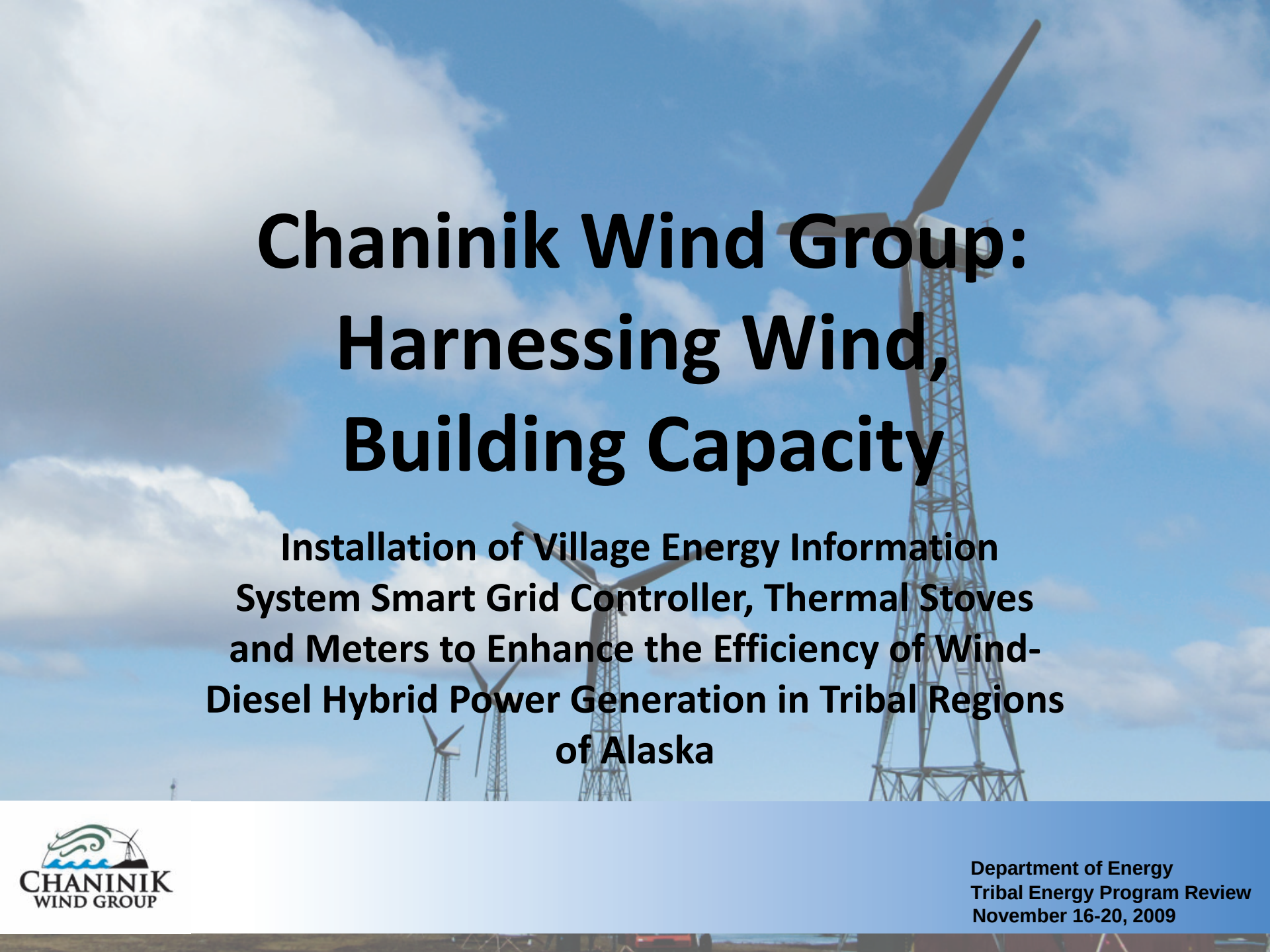

Chaninik Wind Group: Harnessing Wind, Building Capacity

Installation of Village Energy Information System Smart Grid Controller, Thermal Stoves and Meters to Enhance the Efficiency of Wind-Diesel Hybrid Power Generation in Tribal Regions of Alaska

CHANINIK WIND GROUP

Department of Energy
Tribal Energy Program Review
November 16-20, 2009

The Chananik Wind Group

Our goal is to become the “heartbeat of our region.”

CHANINIK WIND GROUP

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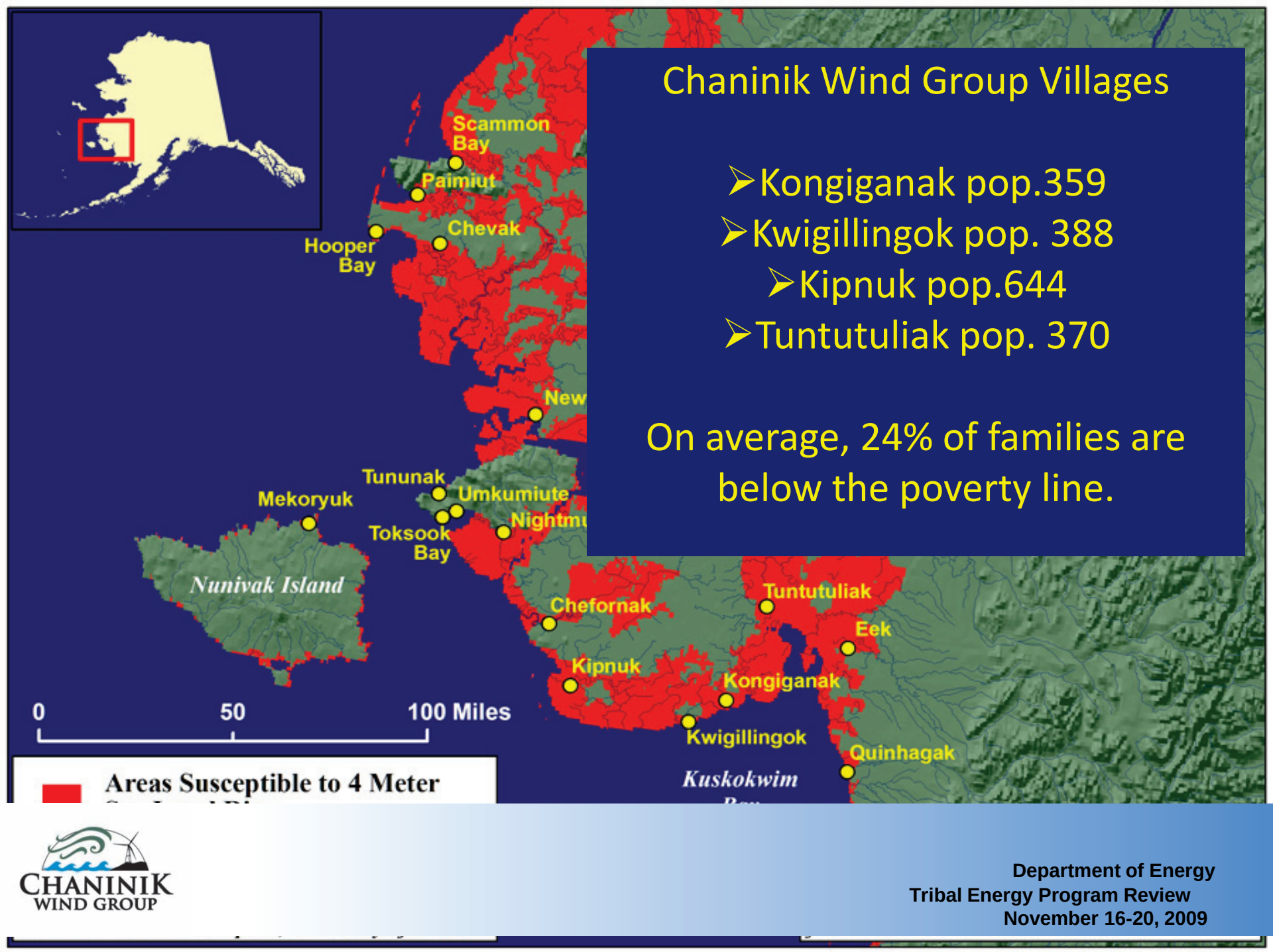

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"Wind generators will lower energy costs and improve the fuel efficiency of the power generators in my village. The community can get its electrical needs all from wind generators without depending on diesel generators."

-Bonnie

Chaninik Wind Group villagers live subsistence lifestyles with few local jobs. These traditional Yupik villages rely on electricity to maintain home lighting, street lighting, telephone service, school service, clinic hours, and freezers to maintain a subsistence lifestyle. Reliable electricity is crucial to the residents of the Chaninik Wind Group.

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"We try our best to keep up with costs of fuel and lights, in order to have transportation for survival."

-Sarah

"Installing wind turbines will be great because of high prices of stove oil is too high. Helping reduce electricity bills would help to buy oil to keep the houses warm."

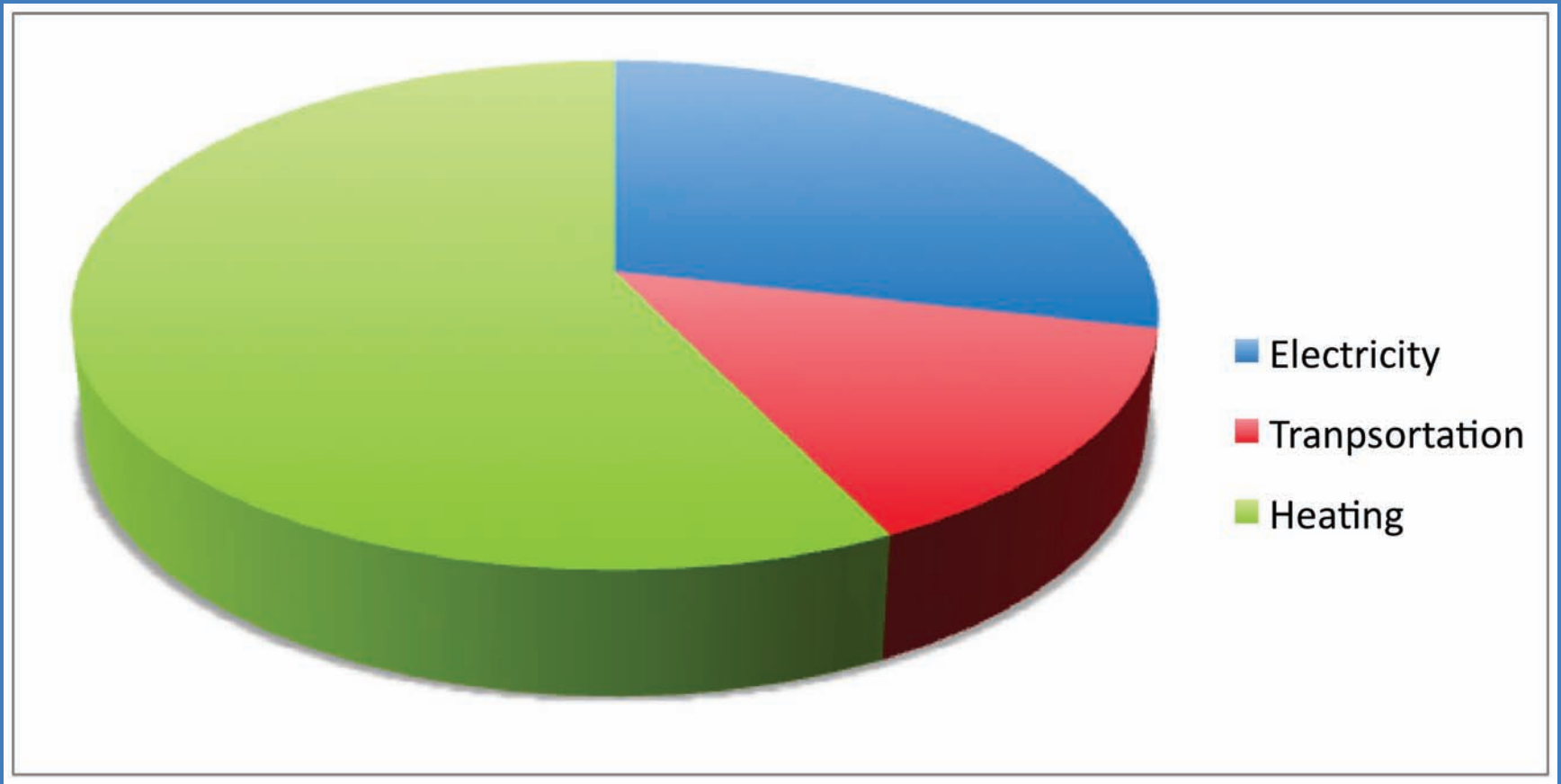
-Paul

Average Prices of Fuel and Food Items in the CWG Region

- ✧Stove Oil: $7.10 per gallon (Bulk)
- ✧Gasoline: $6.69 per gallon
- ✧Propane: $264.00 per 100 lb 25 gallon bottle
- ✧Average ticket from Village to Anchorage RT: $556.36
- ✧Gallon of Milk: $9.26
- ✧Loaf of White Bread: $4.12
- ✧1 lb of Coffee: $10.28
- ✧1 Dozen Grade A Eggs: $4.36
- ✧1 lb of Butter: $5.00

(Courtesy Calista Region Energy Plan)

Annual Average Village Fuel Usage



Chaninik Wind Group Objectives

- ✧Create value
- ✧Coordinate and optimize resources
- ✧Foster new opportunities

CHANINIK WIND GROUP

Strategies for Success

✧Build capacity as a foundation for lasting economic opportunities

✧Good information to make good decisions, lower our costs, and give a pathway to sustainability

✧Adopting innovation to meet our needs and support our values

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Current Project Funding Status

Kongiganak, Tuntutuliak, and Kwigillingok each have funding for:

- ✧Five 95 kW Wind turbines
- ✧Improve efficiency of diesel plant
- ✧Preserve power quality through energy recovery
- ✧Smart metering system
- ✧Thermal Stoves in residents of village elders

Kipnuk has funding for:

- ✧Three 95 kW Wind turbines
- ✧Improve efficiency of diesel plant
- ✧Preserve power quality through energy recovery

- ✧Final step will be flywheels for grid stabilization

Kongiganak construction completed Summer 2009 and awaiting commissioning.

Kwigillingok and Tuntutuliak scheduled for construction Spring 2010

Kipnuk pursuing additional funding and preparing for construction Summer 2010

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Village Wind Heat

A Pathway for Our National Energy Future

CHANINIK WIND GROUP

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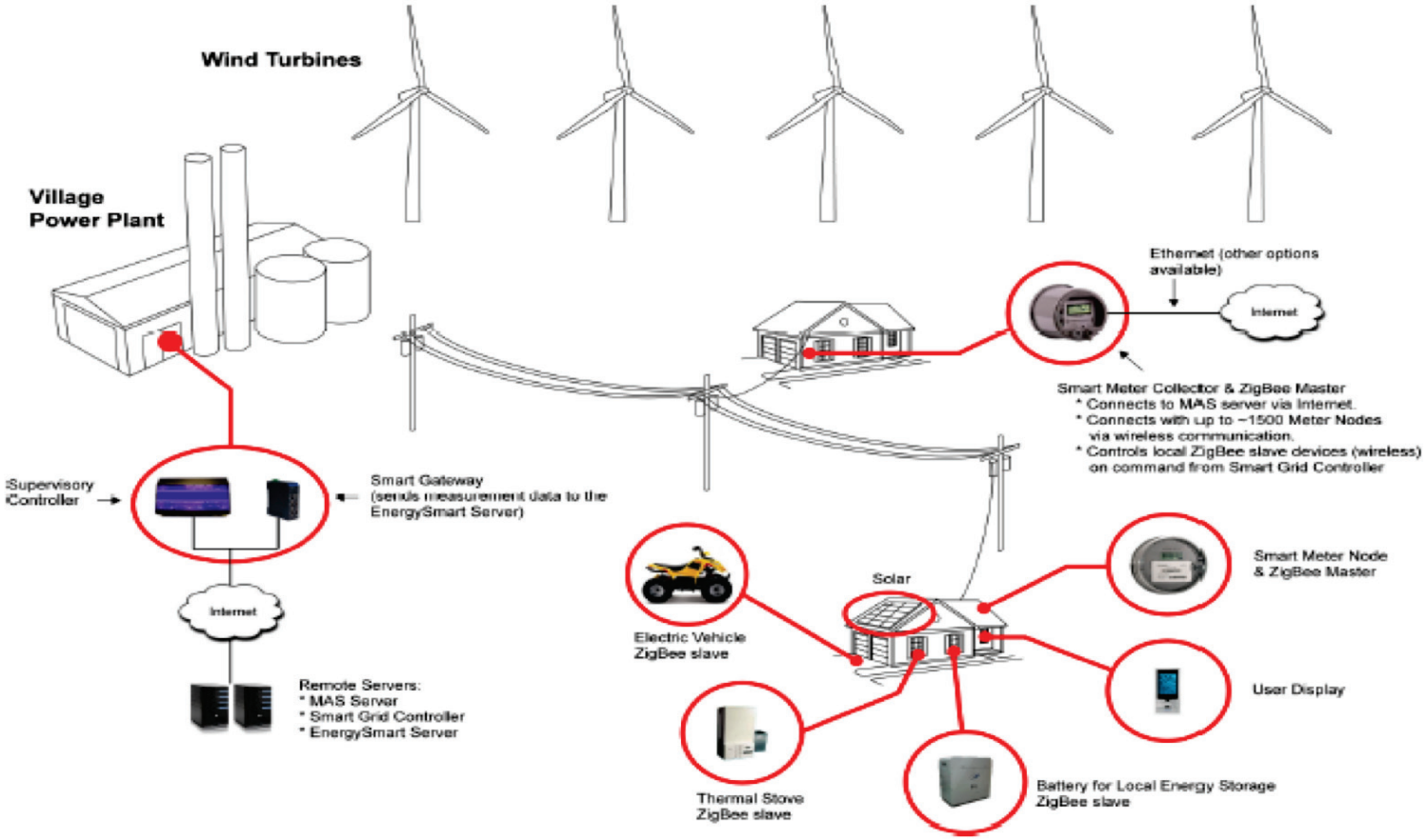
Thermal Stove Heater

Front View

Interior View

CHANINIK WIND GROUP

Village Wind Diesel Smart Grids



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Accomplishments

- ✧ Wind projects under construction
- ✧Smart Grid moving forward
- ✧ Some funding secured for training
- ✧Preliminary identification of training candidates

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Lessons Learned

- ✧Getting help in timely manner
- ✧More resources needed to build capacity
- ✧ New opportunities reveal themselves everyday
- ✧ Failure is not an option

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Activities To Be Completed

✧Complete Smart Grid

✧Expand system with stoves, wind power, and flywheels

✧ Regional workforce development in local communities

✧Begin to address transportation issues

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Thank you very much to the Department of Energy, Tribal Energy Program for their support.

Quyana caknek!

CHANINIK WIND GROUP