The Chaninik Wind Group Update
Under Construction, building capacity and momentum!
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
✧ 3 lbs of Coffee: $15.28
✧ 1 Dozen Grade A Eggs: $4.36
✧ 1 lb of Butter: $5.00

(Courtesy Calista Region Energy Plan)
“We try our best to keep up with costs of fuel and lights, in order to have transportation for survival.”

-Tina

“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.”

-Charles
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.”

-Rachel

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.
Initiatives

- Wind turbines
- Training
- Capacity building
- Power house upgrades
- Advanced controls
- Thermal storage
- Advanced metering
- 3 villages Summer 2011
Thanks Denali Commission for your Support!

Department of Energy

Tribal Energy Program Review
Annual Fuel Usage by Home
Village Wind Heat Smart Grid
Thermal Stove Heater

Front View   Interior View
Advanced Metering

Electronic meters + fast communications + information = real time intelligent management and control.
Smart Grid Controller

Thermal Stoves

Meter Management System

Smart Grid Controller

Diesel Station Controller
Frequency Boiler
Voltage Support
Turbine 1
Turbine 2
Turbine 3
Turbine 4
Turbine 5

Generator 1
Generator 2
Generator 3
Generator 4
Batteries/Flywheel/Caps
Integration: controlling energy/Load
Operator monitoring
A special controller

HEATER

SSR

Safety Cut-out

ETS CONTROL & Base IO

Wind power

Submetering/protective relays/ez on/off
Packaging

Transceivers mount in a plastic enclosure on Thermal Storage Units
Phase 2 Network

Base Station

Home 1
Home 2
Home 3
Home 4
Home 5
Home 6
Home 7
Home 8
Home 9

Power Station Monitor & Control

Internet

Meter Data Management System
Phase 2 Wind Friendly Heater Controller

- HEATER
- LINE POWER
- Base IO
  - Heater Control
  - Line Freq Sensing
  - Safety Cut out
- TTL
Current Project Status

✧ Kongiganak, Tuntutuliak, and Kwigillingok, turbines by spring 2011
✧ New diesels gensets installed
✧ Upgrade diesel plant Spring 2011
✧ Phase 1 controller completed
✧ Install metering and thermal storage units system Spring 2011
✧ Commissioning Summer 2011

Future:
✧ Phase 2 controller,
✧ Inhome displays
✧ Energy storage to increase diesel displacement
✧ Shared services network
✧ Address transportation, conservation, energy efficiency, weatherization, training, solar,.....etc....strengthen the organization to keep going.
Thanks to USDoE Tribal Energy Program!

Quyana!
Contacts

• William Igkurak
  (wmigkurak@hughes.net)

• Dennis Meiners (dennis@iesconnect.net)