The Chaninik Wind Group

It started as a small, simple idea..., now we are headed to become,” the heartbeat of the region.” William Igkurak, President

Chaninik Wind Group Villages

- Kongiganak pop. 359
- Kwigillingok pop. 388
- Kipnuk pop. 644
- Tuntutuliak pop. 370

On average, 24% of families are below the poverty line.
Chaninik’s Goal is to become “The heartbeat of the region”

Objectives:
- Lower Energy costs
- Increased revenues
- Jobs and economic opportunities

- Work Together
- Family of similar systems
- Keep building on efforts
We live off the land
2012 Average Prices

✧ Stove Oil: $7.10 per gallon (Bulk)
✧ Gasoline: $6.69 per gallon
✧ Propane: $264 per 100 lbs
✧ Village to Anchorage RT: $900
✧ Gallon of Milk: $9.26
✧ Loaf of Bread: $5.12
✧ 1 lb of Coffee: $10.28
✧ 1 Dozen Eggs: $5.36
✧ 1 lb of Butter: $6.00
We don’t have roads
How we get around
Every village has its own diesel powerplant
Willie

We would like anything to try to lower energy costs. Our gasoline is rising from $5.35 to $7.10 or something like that. Our heating fuel rise to $8.10. I think we are going to have hardships for some people who don’t have jobs this coming winter. Freight is increasing also.
Two Sisters putting up salmon for the winter

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

My house uses electricity every day and night to run the heater, for cooking, for power tools, steam house, lights, freezer, and we use 150 gallons of stove oil per month. You have to use four wheelers to get fuel.... so money go little long before winter. I don’t worry about fuel and electric money – they talk about wind power. I really go for it. That’s good news to people in our village. I go for better living. We need help from the people that have the power to make these things better.
The Biggest Enemy is cost of Fuel
The First Idea,

Lower Energy costs by installing a community scale wind turbine

- Very simple, but doesn’t really accomplish much,
- No body would help
Second idea,
Communities working together
a greater voice, a greater impact
THIRD IDEA
HEAT WITH WIND!

Front View

Interior View
Where Tribal Energy Came in:
The Answer: Village Wind Diesel Smart Grids
This meant we needed to figure out the wind turbines and **Educate** our power systems.
Oh yeah!, And a way get to the jobsite
It meant we needed to figure out how to build wind turbines.
What it really means is that we needed to build local capacity
What it means to Educate our power systems!

SGC: Smart Grid Controller

WTM: Wind Turbine Manager

LCB: Load balancing methods

DMC: Thermal storage device control
Electric Thermal Storage

Need to adjust control set points and meet usage
Control and Communications Network

KWH Base Station

Home 1

Internet

Power Station Monitor & Control

Smart Grid Controller
Need Smart metering

- FINANCIAL MANAGEMENT (remote disconnect)
- CONSERVATION
- SELL WIND FOR LESS
Where is Chaninik Now?

✧ Tuntutuliak, Kongiganak, just finishing up, commissioning 3 to 4 weeks.
✧ Kwigillingok, finish January/February.
✧ Kipnuk, new power house with wind 2014

✧ What’s next?,,, well

✧ Building capacity and adapting technology...
WHAT ARE WE WORKING ON NOW?
PEOPLE WORK:
Operations, Management and Organization, and creating jobs
Mastering the Technology: Learning how to make the most of the wind
Building a connected view of all the systems
Improving and Simplifying Thermal Storage:

self regulated control
Working for Energy Storage

- Use vehicle batteries to use less fuel
- Widen operating range
- Turn Diesels off wind only operating mode
Bigger Fuel Savings, For Bigger Benefits!

- Utility Fuel Savings = $375,000
- 125,000 in residential at $8.00 = $1,000,000
- 18,000 gallons in public facility recovered heat = $90,000
- Increased local employment = $139,000
- Increased Revenues to Utility = $439,000
- Home Owner reduced heating fuel costs = $563,000

- Estimated Project Savings = $2,628,500
- Less Increased operations = - $148,000

- Estimate Total Annual Benefits over = $2,000,000/ per village
Partners

• Access to resources, equipment/experts
• Training and business development
• Technical support
Chaninik Wind Group on our way to becoming “The Heartbeat of the Region”

Not the End,,, Just the beginning!

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