



Bernie Karl Presents

ALASKA ENERGY/ECONOMY: PROBLEMS AND SOLUTIONS





OUR VISION

Become a self-sustaining state…

one household,

one business,

one community at a time in terms of:

- Fuel sources,
- Energy delivery, and
- Food security.

RESULTS: CHEAP ENERGY/VIBRANT ALASKAN ECONOMY

PROBLEMS

FUEL SOURCE

OIL, OUR MAJOR FUEL SOURCE IS A WORLD MARKET COMMODITY (WE HAVE NO CONTROL OVER THE COST OF OUR FUEL), IT IS SO EXPENSIVE THAT IT IS DESTORYING ALASKA'S ECONOMY

ENERGY DELIVERY

OTHER THAN OIL, NO STATEWIDE ENERGY DELIVERY INFRASTRUCTURE EXISTS, AND TO BUILD NEW DISTRIBUTION INFRASTRUCTURE IS SO EXPENSIVE THAT IT IS BEYOND OUR PRACTICAL REACH

FOOD SECURITY

WELL OVER 90% OF THE FOOD CONSUMED IN THE STATE IS IMPORTED AND SO EXPENSIVE THAT MANY ALASKANS FIND IT UNAFFORDABLE

BIGGER PROBLEM

OTHER THAN SAVINGS, THE STATE OF ALASKA IS OUT OF MONEY

AND THE LEGISLATURE HAS NO CHOICE BUT TO CUT THE BUDGET

???????NO MONEY/NO SOLUTIONS ??????

NOT TRUE

SIMPLY PUT: THE REALITY OF LESS MONEY REQUIRES THE NEED FOR MORE INNOVATION AND PRACTICAL APPLICATION OF INTELLEGENCE

HOW MUCH INNOVATION DO WE HAVE?

HOW MUCH INTELLEGENCE DO WE HAVE?

HOW MUCH MONEY DO WE HAVE?

ENOUGH!

WHAT DO INNOVATIVE AND PRACTICALLY INTELLEGENT SOLUTIONS LOOK LIKE?

As simple as pumping water without electricity

- initial cost $800,
- zero operating cost

OR

Applying a simple concept to a complicated system.
Geothermal heat is energy, now make electricity.

• Research and Development cost	$2,000,000
• Capital Cost	$400,000
• Operating Result	$0.06/kWh

OR

Geothermal heat is energy, now grow vegetables year-round in Alaska.

• Research and Development cost	$1,500,000
• Capital Cost	$500,000
• Operating result:	$ 0.75/head of fresh lettuce
	$ 1.50/lb fresh tomatoes

OR

Recycle cardboard and paper to produce a fuel source which can:

- heat cleanly
- and/or produce electricity cleanly

Research and development Cost:	$4,000,000
Capital Cost:	$4,000,000
Operating result:	BTU's at ≈ $1.50/gallon heating fuel
	Electricity ≈ $0.10/kWh

OR

Improve the design, reduce the cost, and improve operation capacity of the **Chena Power Energy System**. This third generation system is modular, requires no foundation, produces 300 net kWh. It is synchronous and therefore requires no grid.

Research and Development Cost		n/a
Capital cost		< $500,000
Operating result	electricity	≈ $0.10/kWh
(depending on fuel source)		

OR

Use the ash from coal, and/or recycled energy pellets, combined with recycled crushed glass to make locally produced Geopolymer Cement.

- Research and Development Cost: $250,000
- Capital Cost: $250,000
- Operating Result: per cubic yard cost of concrete 30% cheaper than imported Portland Cement

- 80% less CO2 emissions*
- 2 to 4 times stronger*
- More durable*
- More stable*
- Less permeable*
- Self-adherent
- Fire resistant to >1800 °F
- Acid, base & salt resistant
- Blast & earthquake resistant

* Than ordinary Portland cement

OR

Without prohibitively priced infrastructure

Utilize high temperature combustion wood gasifying, clean burning heating devices where wood is available.

- Research and Development Cost $0
- Capital Cost < $10,000 for single family home in rural Alaska
  < $30,000 for community buildings in rural Alaska
- Operating Result: ≈ $ 1.40/gallon in rural Alaska

OR

Utilize clean-coal technology to provide cheap energy to community heating systems in rural Alaska.

- Research and Development Cost: $0
- Capital Cost: $250,000 installed in rural Alaska
- Operating Result: ≈ $ 1.75/gallon in rural Alaska

OR

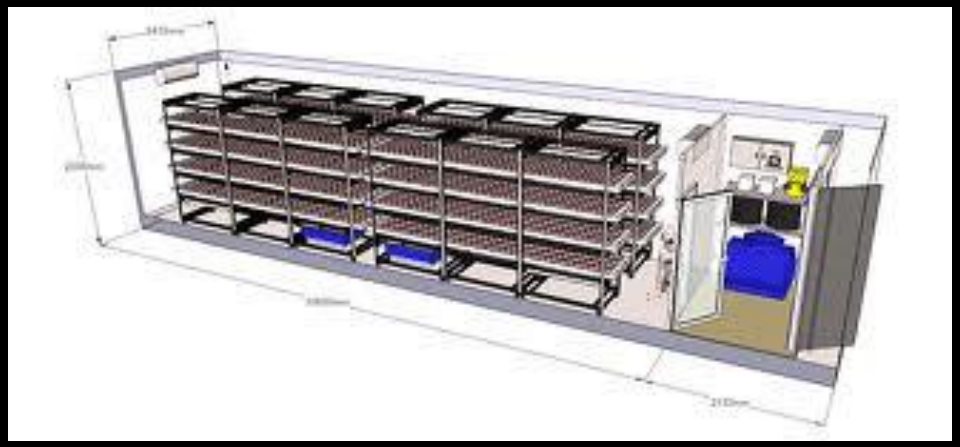
Add a combined heat/power component to community heating systems throughout Alaska

- Research and Development Cost $ 2,000,000
- Capital Cost $ 25,000 for community buildings in rural Alaska
- Operating Result: ≈ $ 0.10/kWh

OR

Add modular year-round controlled-environment grow systems to provide fresh vegetables through-out rural Alaska

- Research and Development Cost: $ 0
- Capital Cost: $ 50,000/module
- Operating Result: $ 1.25/head of fresh lettuce in rural Alaska



OR

Add modular year-round controlled-environment grow systems to provide animal fodder throughout Alaska

- Research and Development Cost: $ 0
- Capital Cost: $ 50,000/ module
- Operating Result: ≈ cost of feed less than the cost of a bale of hay

OR

Utilize Air Curtain Burners to eliminate Class II or Class III municipal solid waste landfills throughout rural Alaska*

- Research and Development Cost: $ 0
- Capital Cost: $ 48,900 - $250,000 for communities in rural Alaska
- Operating Result: environmentally compliant community waste disposal at a fraction of current cost

OR

Add a 1,000,000 BTU FireBox Heat Capture component to the Air Curtain Burner and heat greenhouses, community centers, schools, swimming pools and other public facilities.

- Research and Development Cost: $ 0
- Capital Cost: $ 90,000- $500,000 for communities in rural Alaska
- Operating Result: cheap energy and environmental compliance

* 40 CFR 1 (C) 60 EEE 60.2887(g) “air curtain incinerators in isolated areas of Alaska. Incineration units are excluded if it is used at a solid waste disposal site in Alaska that is classified as a Class II or Class III municipal solid waste landfill, as defined in § 60.2977

SO…….WE DO HAVE ENOUGH!!!!

INNOVATION

AND

INTELLIGENCE

AND

MONEY

TO PROVIDE ALASKA WITH CHEAP ENERGY AND A VIBRANT ECONOMY

WE KNOW THIS BECAUSE.....

All of the innovative ideas and products you have just seen are being utilized or sold at:

Chena Hot Springs Resort

K and K Recycling or

Chena Power.

We are just one of several organizations that are innovating and applying our collective intellect to:

- Dramatically lower the cost of energy in Alaska
- Create a vibrant and growing economy in Alaska and
- Solve Alaska's problems

We look forward to working with state agencies, regional corporations, local communities and individuals as we all move Alaska forward.

Bernie and Connie Karl