

# Alaska's economic future: impacts of a gas line

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# Interior Alaska Cost of Energy

- Aggregated cost
  - Space heating - \$ 229 million
  - Electricity - \$ 250 million
  - Transportation – \$212 million
- Users
  - Residential Households - \$ 350 million
  - Commercial – \$192 million
  - Industrial - \$148 million
- Total cost: **\$691 million**

Source: Interior Issues Council Cost of Energy Task Force, January 2011

# Interior Alaska

## Potential Savings with Gas @\$10

	Space Heating	Electric
Current	\$ 229 million	\$ 250 million
Conversion to gas	\$71 million	\$ 181 million
Savings	\$158 million	\$ 68 million
Savings	<b>69 %</b>	<b>27 %</b>
Total Savings	<b>\$ 226 million</b>	

# Interior Alaska

## Potential Savings with Gas @\$4.59

	Space Heating	Electric
Current	\$ 229 million	\$ 250 million
Conversion to gas	\$33 million	\$ 83 million
Savings	\$196 million	\$ 167 million
Savings	<b>86 %</b>	<b>67 %</b>
Total Savings	<b>\$ 363 million</b>	

# UAF Energy Needs

## Heat:

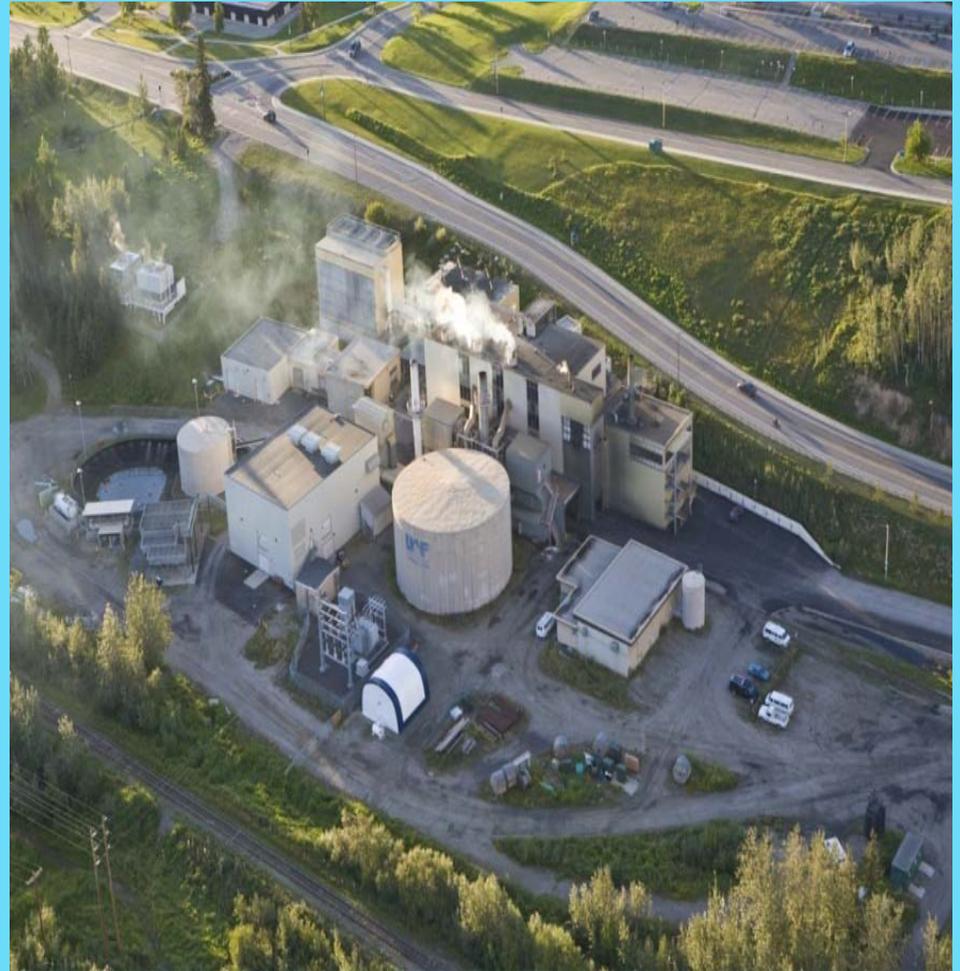
- 2 Coal boilers (1964)
- 2 Oil boilers (1972/1986)

## Power:

- 10MW Steam heat/electric
- 10MW Diesel generator

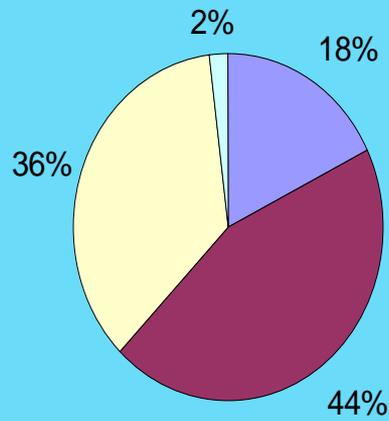
## Serving:

- 10,000 Students, faculty, staff
- 3 million square feet



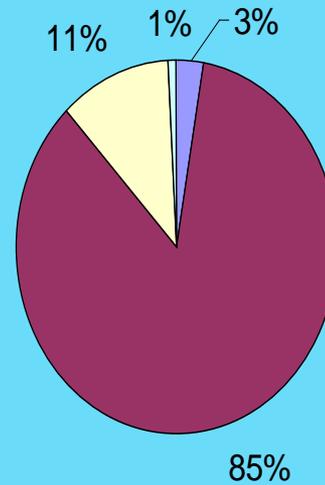
# UAF Fuel Cost CY10

Energy costs



\$8,130,000

Campus energy input



# Available Fuels/Resources

- **Oil** - \$26.11/MMbtu
- **LNG** - \$19.50/MMbtu
- **Coal** - \$3.46/MMbtu
- **Electricity** - \$50/MMbtu
- **Nuclear** – No permits
- **Biomass** – No market
- **Piped gas** - ??????



# UAF Impact of Oil Only

Fuel type	Unit	Current cost per MMbtu	Current cost with 2010 quantities
Coal	Ton	\$ 3.46	\$ 4.0 million
Oil	Gallon	\$ 26.11	\$ 3.4 million
Gas	MCF	\$ 19.50	\$ 0.4 million
TOTAL			<b>\$7.8 million</b>
	<b>Cost of Switching Completely to Oil:</b>		
Coal	Ton	\$ 3.46	-
Oil	Gallon	\$ 26.11	\$ 33.9 million
Gas	MCF	\$ 19.50	-
TOTAL			<b>\$ 33.9 million</b>
			<b>→ + \$ 26.1 million</b>

# UAF Impact of switching to Gas

Fuel type	Unit	Current cost per MMbtu	Current cost with 2010 quantities
Coal	Ton	\$ 3.46	\$ 4.0 million
Oil	Gallon	\$ 26.11	\$ 3.4 million
Gas	MCF	\$ 19.50	\$ 0.4 million
TOTAL			<b>\$7.8 million</b>
<b>Cost of Switching Completely to Gas @\$10:</b>			
Coal	Ton	\$ 3.46	-
Oil	Gallon	\$ 26.11	-
Gas	MCF	\$ 10.00	\$ 13.0 million
TOTAL			<b>\$ 13.0 million</b>
			<b>→ +\$ 5.2 million</b>

# UAF Impact of switching to Gas

Fuel type	Unit	Current cost per MMbtu	Current cost with 2010 quantities
Coal	Ton	\$ 3.46	\$ 4.0 million
Oil	Gallon	\$ 26.11	\$ 3.4 million
Gas	MCF	\$ 19.50	\$ 0.4 million
TOTAL			<b>\$7.8 million</b>
<b>Cost of Switching Completely to Gas @ \$4.59:</b>			
Coal	Ton	\$ 3.46	-
Oil	Gallon	\$ 26.11	-
Gas	MCF	\$ 4.59	\$ 6.0 million
TOTAL			<b>\$ 6.0 million</b>
			<b>→ -\$ 1.8 million</b>

# UAF Current Plan – without Gas

- Increase energy efficiency
- New heat and power plant
- Coal – biomass fluidized bed boiler
  - Up to 30% biomass & waste; average 10%
  - Higher efficiency coal combustion
  - Reduce emissions levels
  - Reduce oil consumption
- Purchase of renewable energy electricity
- High capital costs

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