

An aerial photograph of the University of Alaska Fairbanks campus during the "golden hour" of sunset. The sun is low on the horizon, casting a warm, golden glow over the entire scene. The campus features a central green quad with a circular design, surrounded by various academic and administrative buildings. A large parking lot is visible in the foreground. The campus is bordered by dense green forests, and a road curves around the perimeter. The overall atmosphere is peaceful and scenic.

An Energy Solution

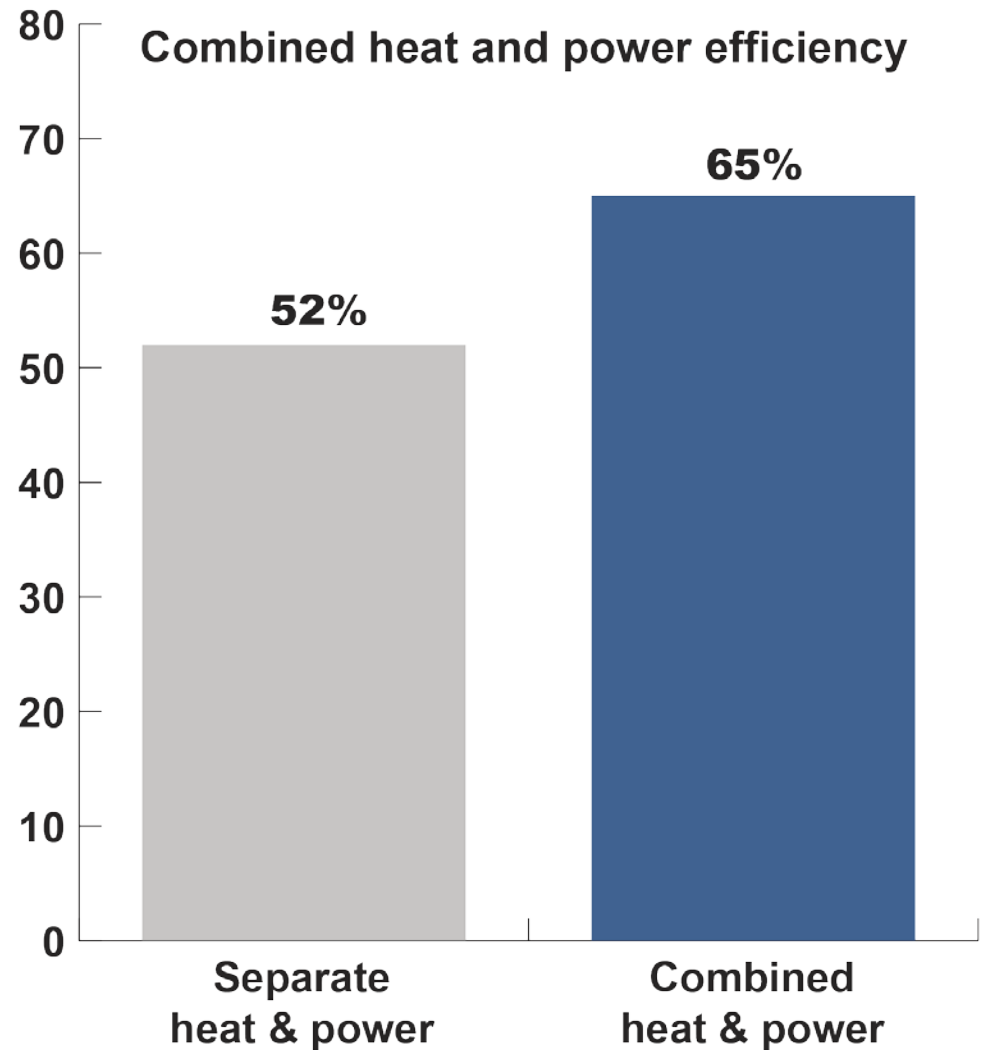
for the next 50 years

About UAF

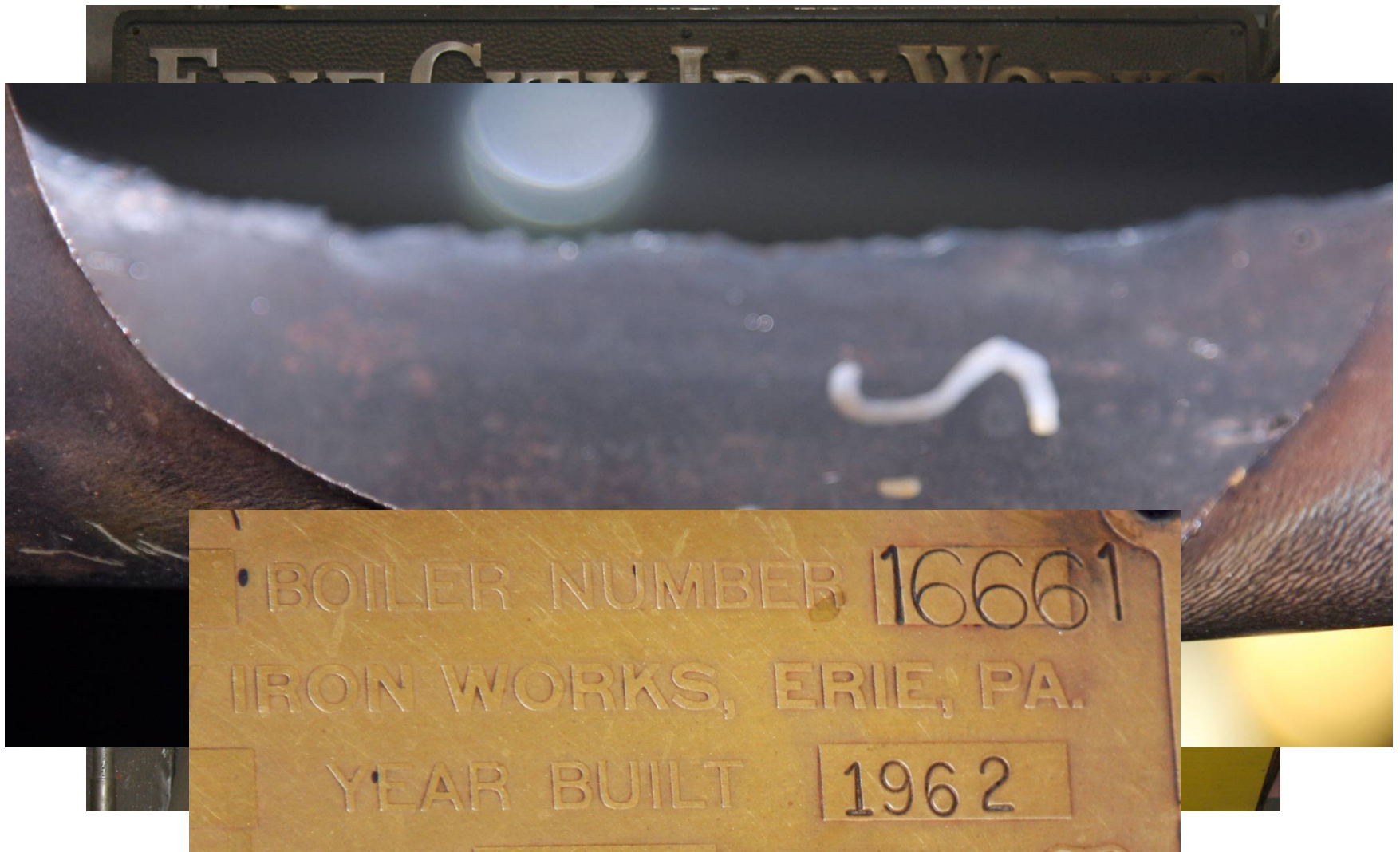
- Founded in 1917
- More than 10,000 students statewide
- Statewide service
 - *Dozens of sites around Alaska*
 - *Thousands served via informal workshops and events*
- More than 1,300 degrees awarded in 2013
- Economic engine for Alaska
 - *More than \$100 million in research dollars*
 - *More than 4,000 jobs*
 - *Nearly 17,000 alumni living and working in Alaska*

Energy is the foundation

- 3.1 million square feet of public facilities
- Average age of building: 34 years
- All these things need heat and power
- More than 500 schools and universities have their own heat and power plants



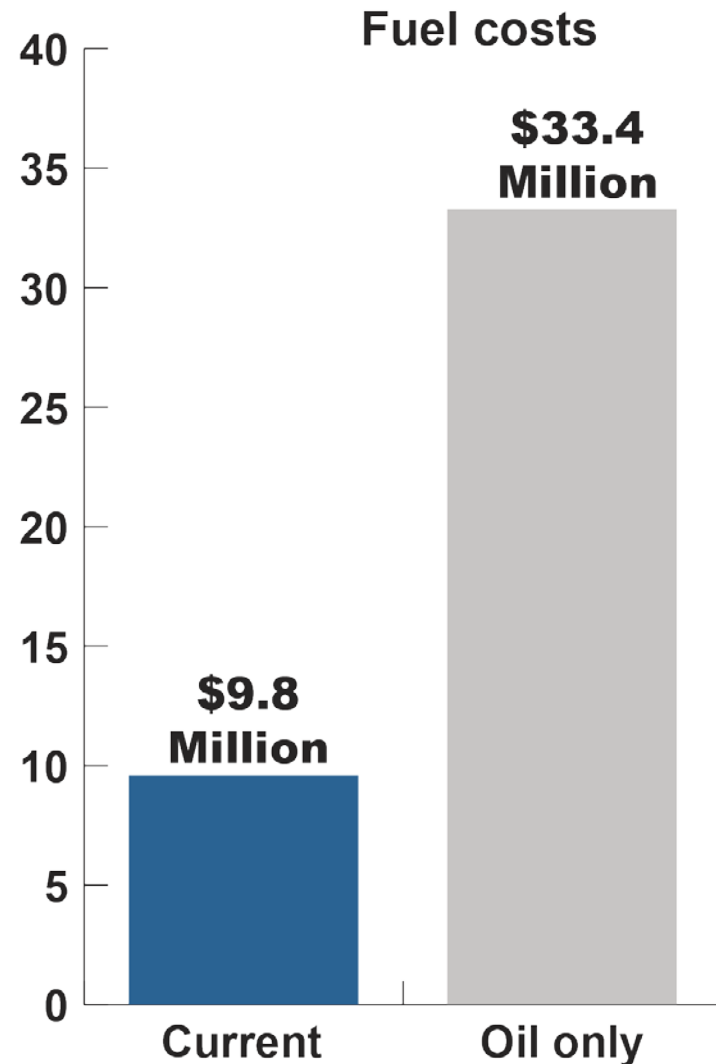
Our foundation looks like this



What if the coal boilers fail?

That could mean firing up the backup oil/gas boilers.

- *An adequate supply of gas is not available.*
- *Using only diesel would more than triple fuel costs.*
- *The university's existing operating budget cannot absorb that.*



What if the entire plant fails?

- Billions of dollars in public infrastructure at risk of freezing. More than \$1 billion to repair.
- Students need alternate housing.
- Research stops.
Education stops.
Service stops.
- Enrollment and funding impacted for years in the future.



Failure to invest now invites
catastrophic failure

*Every year we delay increases
the risk and the cost.*

Solution: Major plant upgrade

A diversified energy portfolio

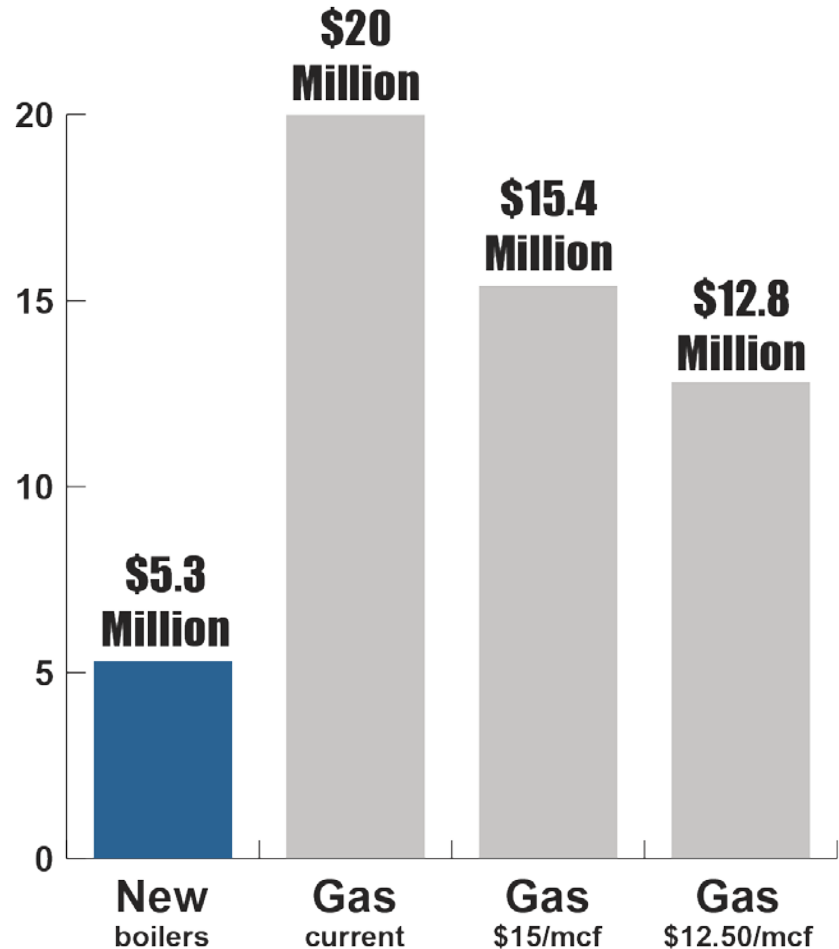
- New circulating fluidized bed (CFB) boilers
 - *Flexible solid fuel, proven technology*
 - *Coal with up to 15 percent biomass*
 - *Capable of generating 17 MW of power*
- Oil/natural gas backup boilers
- Purchase renewable energy, when available
- Energy conservation on campus
- Small renewable projects on campus

Flexible, sustainable, fiscally responsible

Why don't you _____?

- Buy power from GVEA
 - *We need heat and electricity.*
 - *Not cost effective to heat with electricity*
- Build a natural gas plant
 - *A reliable supply of gas is not available*
 - *Lower capital cost*
 - *Double to more than triple the fuel cost*

Fuel costs — Natural gas



Public-private partnerships?

- Potential benefits
 - *Partner assumes risk of cost overruns*
 - *Contracting, construction efficiencies*
 - *Share operations with local utility providers*
 - *Access to deeper pool of operational expertise*
- Potential risks
 - *Higher cost of capital*
 - *Property taxes adding to operating cost*
 - *Private partners need funding certainty*

P3 vs. UA capital budget

| | Capital appropriation | UAF contribution | Operating budget increase |
|---|-----------------------|----------------------|------------------------------------|
| Board of Regents' proposal <i>\$50 million UAF bonding, \$195 capital appropriation</i> | \$195 million | \$50 million | 0 |
| P3 scenario <i>Partner builds, owns and operates and bills UAF for heat and power</i> | 0 | \$4 million per year | \$27 million per year for 20 years |

P3 or not, an appropriation is required.

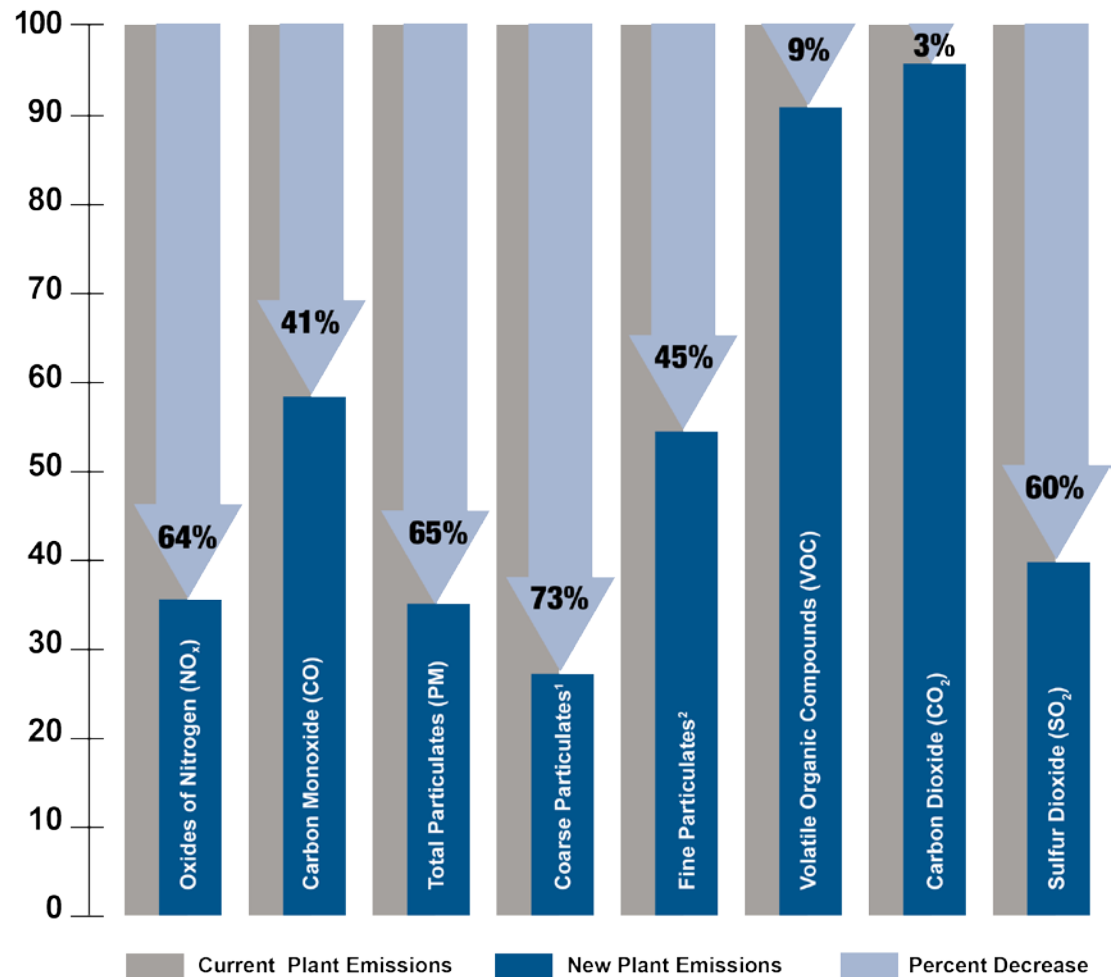
Replacement now is fiscally responsible

- Aging plant and a growing campus
- More than \$35 million in maintenance needed in the coming years
- That doesn't guarantee continued reliable operation
- About half of those projects are bandages not needed in a new plant

*Energy solutions for the future,
not temporary patches.*

Environmental benefits

- Current main boilers are 1890's technology
- Plant burns coal, diesel and gas
- Newer technology is more efficient
- Current load and upgraded plant reduces emissions



¹ 2.5 – 10 micrometers (PM 10)

² < 2.5 micrometers (PM 2.5)

Additional benefits

- Increase in available construction jobs for Alaskans
- Increase in economic activity during 2015-2018 time period
- Public safety
 - *UAF historically serves as a place of shelter during emergencies.*
 - *Upgraded plant could heat and power campus independent of the grid.*

Timeline

- Current: Preliminary design and permitting
- FY15: Requesting funding for full design, boiler and equipment purchase, and construction
 - \$50 million in UAF bonding authority
 - *UAF can make the bond payment with fuel cost savings*
 - \$195 million state funding
- Target completion and opening: Winter 2018

An aerial photograph of a large industrial facility, likely a power plant or refinery, featuring several large storage tanks, buildings, and smokestacks emitting plumes of smoke. The facility is situated near a highway and greenery.

Questions?

