Energy Solutions in Rural Alaska:

Tanana Chiefs Conference and Alaska Center for Energy and Power

DOE Tribal Energy Program Review
October 28, 2010
TANANA CHIEFS CONFERENCE provides a unified voice to advance tribal governments, economic and social development, promote education and physical and mental wellness, and protect language, traditional, and cultural values.
Alaska Center for Energy and Power meets state and local needs for applied energy research by developing, refining, demonstrating, and ultimately helping commercialize marketable technologies that provide practical solutions to real-world problems.
TCC-ACEP PARTNERSHIP:

Matches the rural service capacity of TCC with the engineering and technical expertise of ACEP to achieve energy solutions in rural communities.
What does the term “energy solutions” mean?

✓ utilize local resources
✓ lower cost of electricity and heat for local consumers
✓ reduce dependence on fossil fuels

…but most important of all…
“Energy solutions” means creating sustainable communities.
Reykjavik in 1932
All buildings heated using fossil fuels
Reykjavik today
One of the cleanest cities in the world
How do we get there?

Energy projects in TCC communities must meet three basic criteria:

✓ Community planning
✓ Economically feasible
✓ Technically feasible
Energy research at the University of Alaska

Geophysical Institute
Institute for Social and Economic Research
Institute of Northern Engineering
Petroleum Development Laboratory
Agriculture and Forestry Experiment Station
UAA Logistics Program
Institute of Arctic Biology
UAA Engineering Program
International Arctic Research Center
Resilience and Adaptation Program
Cooperation Extension
Rural Campuses
Energy Projects Funded Under TCC-ACEP Partnership

- Diesel Generator Efficiency Project = $280,000
- Organic Rankine Cycle Project = $304,306
- Diesel Efficiency Field Testing = $551,408
- Galena Greenhouse & Power Plant Project = $320,452
- Energy Efficiency & Conservation Block Grants = $585,300
- Interior Regional Energy Plan = $299,810
- Nikolai Pre-paid Electric Meters = $60,000

TOTAL FUNDING = $2,401,276
Sustainable Agriculture & Community Greenhouses

- Heated with recovered heat from village power plant
- Community garden
- Fresh, nutritious, affordable produce
- Local employment
- Educational tool for students
- Reduce amount of imported food, carbon emissions, and solid waste in landfill
Wood-fired Heating Systems

- Currently installed in Tanana, Dot Lake, Craig, and other Alaska communities.
- Proposed for Anvik, Takotna, Ruby, Fort Yukon, McGrath, Koyukuk, and others.
- TCC and ACEP can help locate funding sources and provide technical assistance.
Organic Rankine Cycle (ORC) Projects

ORC engines use recovered heat from diesel generator to produce additional power.
Alaska North Slope Propane
State of Alaska

- State will generate 50% of electricity from renewable sources by 2025.
- Emerging Energy Technology Fund
- Renewable Energy Fund
- Energy Efficiency Loan Fund
- Energy efficient public buildings
- State will achieve 15% increase in energy efficiency per capita by 2020.
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