



BRIEFING PAPER

Alaska Wood Energy Development Task Group

May 20, 2008

ISSUE

With national heating and electricity costs increasing yearly, Alaskan communities are experiencing drastic fiscal impacts. In some communities, utilization of excess woody biomass from Alaska's forests has risen from being a prominent issue to a necessity for survival. Economic and environmental stressors promote developing markets for alternative biomass energy. In both the short and long term, alternative energy will save money; however, the fiscal resources required to cover the up front costs for transitioning from fossil fuels to wood/wood-chip/wood-pellet burning appliances and support infrastructure are limited. The Alaska Wood Energy Development Task Group was formed in 2004 to provide funding and expertise for selected projects that promote the use of biomass over fossil fuels.

BACKGROUND

Biomass comes from two primary activities: treatments to reduce hazardous fuels, and forest management to accomplish other objectives. Alaska woody biomass sources include:

- o Trees thinned from the wildland urban interface (WUI) to reduce risk to communities from wildland fires
- o Trees from hazard fuel clearings in fire-prone, spruce bark beetle-killed forests
- o Logging and sawmilling by-products (including woodchips, sawdust and planer shavings from sawmill operations)
- o Low quality sawlogs and smaller diameter trees in commercial stands that currently have low or no market value and thus are under-utilized

Alaska's forests provide an abundance of locally-grown, sustainable wood products. Broader utilization of forest resources creates economic opportunity, beyond traditional sawmill uses, through a wood-based bioenergy industry. Renewable wood energy products are also considered "carbon neutral" from a climate change perspective. Additional benefits from a more wholistic forest resource usage include: habitat improvements for a wide range of wildlife that depend on a mosaic of forest age classes, and fuels management in the wildland urban interface from a wildland fire risk management perspective.

ALASKA WOOD ENERGY DEVELOPMENT TASK GROUP (AWEDTG)

The Alaska Wood Energy Development Task Group is a coalition that is exploring opportunities to increase the use of wood for energy in Alaska. From 2005 to present, the task group has solicited statements of interest for thermal wood heat projects in Alaska. From 2005 to present, the task group has received and reviewed 79 statements of interest; selected 42 projects for further study; completed 34 site inspections and field reports; completed 21 feasibility assessments; 2 projects are in the design stage; and 3 projects are installed and operational.

The USDA Forest Service and Alaska Energy Authority have been the lead agencies, providing expertise and the bulk of the funding. Juneau Economic Development Council provides the primary "point of contact," resource information, technical assistance, site reconnaissance, and pre-feasibility assessments.

AWEDTG Members

- Alaska Energy Authority
- Alaska Village Initiatives
- Alaska DNR Division of Forestry
Denali Commission
- Juneau Economic Development Council
- USDA Farm Services Agency
- USDA Forest Service Alaska Region
- USDA Natural Resources Conservation
Service
- USDA Pacific Northwest Research
Station
- USDA Rural Development
- USDI Bureau of Indian Affairs
- USDI Bureau of Land Management
Alaska Office
- USDOE National Renewable Energy
Lab
- UAF Cooperative Extension Service

PROJECTS THAT ARE NOW OPERATIONAL

- o **Craig** - The boiler was operational at the beginning of May. The City of Craig constructed a wood-fired boiler heating system to supplement propane and oil heating systems for the municipal pool water, pool building, and elementary and middle school buildings. The new facility uses wood shavings, chips, and dried planer shavings, collectively known as hog fuel, from local mills as fuel. The system is maintained by the Craig City School District. Installation of this system will result in cost savings of \$40,000 - \$60,000 per year between the municipal pool and the school buildings. The project will also reduce the reliance on fossil fuels for heating and will also help local mill owners by purchasing and utilizing wood waste generated by their manufacturing process. Funding was provided by the USDA Forest Service, USDA National Resource Conservation Service, Alaska Energy Authority, the Denali Commission, and the City of Craig.
- o **Kasilof** - A community of about 10 families in Kasilof has installed two GARN wood-fired boilers, located in an outbuilding, to supplement masonry heaters used to heat their community center. The GARN units provide roughly one-third of the community center's heat. Hot water provides warmth through radiant tubing in the floor and wall baseboard heaters. The boilers also provide all of the hot water that is used for the village's community kitchen and hand laundry. Their wood source comes from beetle-killed spruce found on their 200 acres of land off of North Coho Loop Road. The community already has plans to install another GARN unit in their barn, which stores crops. Funding for the project came from the Alaska Department of Health and Human Services, and the USDA Forest Service Jump-Start Wood Energy Program grant through the Division of Forestry and managed by the Juneau Economic Development Council (JEDC).
- o **Tanana** - Two GARN Boilers are in place in the community of Tanana and are used to heat a washeteria and city water system. Not only do the boilers cost less than importing fuel oil, they create jobs within the community as the source of fuel is driftwood harvested from the Yukon River. The boilers were transferred from the city to the nonprofit water and sewer utility Too'gha Inc. Funding for the project came from the USDA Forest Service Jump-Start Wood Energy Program grant through the Division of Forestry (managed by JEDC), the Alaska Department of Commerce Community and Economic Development, and Too'gha Inc.



Above Left: Dave Frederick of Alaskan Heat Technologies explains the operation of GARN wood-fired boilers in Tanana, AK. Photo by Daniel Parrent

Above Right: Ted Eller loads wood into a Garn wood-fired boiler at the Ionia community in Kasilof. The boiler is heating a large community center and much of the hot water the group consumes. Photo by M. Scott Moon

INFORMATION SOURCES

- City of Craig Website: http://www.craigak.com/index_files/wood.htm
- Peninsula Clarion Article: "Ionia Revisits Wood as Fuel" by Phil Hermanek, 3/20/08
- Daily News-Miner Article: "Building a Better Wood Stove in Tanana" by Stefan Milkowski, 11/14/07
- AWEDTG Wood Energy Conference Materials: <http://www.tananachiefs.org/natural/AWEC2007.shtml>

CONTACT

Chris Maisch, State Forester:

Chris.Maisch@alaska.gov

(907) 451-2666