

# Village Scale Biomass Fuel Harvest & Processing

## APPLICANT CONTACT INFORMATION

Alaska Department of Natural Resources – Division of Forestry, Tok  
P.O Box 10  
Tok AK, 99780  
907-883-1400 jeffrey.hermanns@alaska.gov

## PROJECT PARTNERS

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**ENERGY ACTION: WYNNE AULD ← if you want to include me, I am here**

Ms. Auld will provide project implementation assistance.  
(907) 744-1085, wynne@energyactionllc.com

## TOTAL PROJECT COST

**TOTAL Project Cost: 30000**  
**Grant funds requested 15000**  
~~Match committed: 15000~~  
**% Match: 50%**

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PREVIOUS APPLICATION TITLES OR NUMBERS: None

## 1. PROJECT SUMMARY

The Village-Scale Biomass Fuel Harvest and Processing Project (“The Project”) will establish production parameters for manufacture of wood chips in small and remote communities. The Project diversifies available energy sources available by establishing reliable costs and operational metrics for small-scale chipping, which will enable project managers to consider wood chips as a viable biomass fuel alternative to cordwood.

### 1a. Project Description:

The Project’s “energy technology” diversifies energy sources available by establishing production parameters for small-scale wood chips (<10,000 tons/yr) small and or remote villages. This energy technology innovates in the field of solid biomass fuel sourcing and distribution. The specific equipment components of the Project are:

- 1) **Biomass Harvest:** Hand felling and bunching and skidding and hauling with small tractor, atvs or pickup truck with dump trailers.
- 2) **Biomass Chipping:** Small chipper pulled by pickups, tractors and or ATV.

### Feasibility:

Wood chip energy devices offer operational benefits over cordwood devices – they are thermostatically controlled and have auto-light options, offering a close substitution for oil heat devices. Whereas cordwood systems require repeated manual stoking, wood chips devices are designed to operate unattended, offering labor savings. The biggest factor is the utilization of small diameter wood (small diameter black spruce or other species) that cannot be utilized by cordwood system enabling renewable biomass systems where no other system would be feasible. Some villages only have small wood not suitable for cordwood systems. Also woodchip fired systems work very well in coordination with cordwood systems utilizing parts of the tree, namely the top and branches not suitable for cordwood. Nothing has been done to date determine if small chipper pulled by pickups or atv would be viable option for small chip fired systems on the market. Chipping is new technology to rural Alaska. This project would determine if this technology is feasible to provide chips to rural Alaska.

In addition to operational benefits, wood chip fuel is traditionally much less expensive than cordwood fuel, because it can be manufactured from a wider variety of stems. For example, cordwood at \$300 per cord is about 4x as expensive as chips at \$50 per ton, on a \$/ btu basis.

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**Benefits:** The project’s potential benefits are local, regional, and statewide in scope.

- **Expanded project opportunities:** To date, village-scale projects have implemented only cordwood boiler projects or large scale wood chip projects. There is a need to establish the production parameters of small-scale chipping to enable project managers to reliably differentiate between fuel alternatives.
- **Job creation:** A forest industry must be established to commercially source wood fuel of any type, including cordwood or wood chips. Expanding biomass energy project opportunities will result in improved financial and operational performance of projects.
- **Complementary to other job skills, such as fire fighting and forestry technician training.**
- **Consistent with the long-term energy plan:** The Interior Regional Strategic Energy Plan

**1b. Project Innovation:** Introduction of small chippers with traditional hand harvest techniques.

**1c. Project Site and Demonstration Environment:** Upper Tanana and Copper River Basin

**1d. Priority:** The project meets the following priority considerations:

1. The application is submitted by an Alaska organization, Division of Forestry Tok Area Office
2. 3. The project has 50% matching funds committed from the applicant.



TOTAL	30000		
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TOTAL PROJECT COST	30000
TOTAL MATCH	15000
EETG GRANT FUNDS REQUESTED	
% MATCH	
Cash Match -	50
In-kind Match (equipment hrs.)	100

<b>In-Kind Match -- Labor Rates</b>	
n/a -- no labor match	
<b>In-Kind Match -- Equipment</b>	
	\$50/ hr. Chipper Trailer \$100Day Skidders 150 Day

**4. Project Team Qualifications**

- Jeffrey D. Hermanns, Tok Area Forester**  
 As the Tok Area Forester, Jeffrey manages over 8.5 million acres of land in Eastern Alaska, supervises twelve (12) full-time employees and 250 emergency fire fighters. He is responsible for timber and resource planning for the area. He served on the project team for AGSD's Tok School Biomass Heat Project, which was awarded under AEA's Renewable Energy Fund Round I. Jeffrey has been a key player in drafting the Tok Community Wildfire Protection Plan, the Preliminary Feasibility Assessment for Heating with Wood in Tok, Alaska, and ongoing fuel reduction efforts.
- If you want to include me, I am here! **Wynne Auld, Energy Action. Project Consultant:** Auld is a biomass thermal energy consultant and the owner of Energy Action. She specializes in working biomass heat project planning and forest-products business development. Auld will assist the project manager with project implementation.

**5. Discussion of Commercialization of Funded Technology**

The project advances the conditions for biomass energy development in remote Alaskan communities by providing reliable information about small wood chip production.

**6. Signed Applicant Certification:** "By signature on this application, I certify that we are complying and will comply with the amount of matching funds being offered."

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