



MONTANA  
DEPARTMENT OF NATURAL RESOURCES AND CONSERVATION

FUELS FOR SCHOOLS AND BEYOND  
COMMUNITY WOOD ENERGY PROGRAM

**WOODY BIOMASS ENERGY  
PRELIMINARY FEASIBILITY ASSESSMENT  
GRANTS  
(REGIONAL)**

**ANNOUNCEMENT AND REQUEST FOR APPLICATIONS**  
**RELEASE DATE: NOVEMBER 2, 2011**

**APPLICATION DEADLINES:**  
APPLICATIONS APPROVED ON FIRST-COME, FIRST-SERVED BASIS WITHIN  
TWO GRANTING CYCLES (ROUNDS)

ROUND 1 CLOSSES FEBRUARY 7, 2012  
ROUND 2 CLOSSES JUNE 7, 2012

**SUBMIT APPLICATIONS TO:**  
Julie Kies  
Biomass Utilization Program  
Montana Department of Natural Resources and Conservation  
2705 Spurgin Rd. Missoula, MT 59804-3199

## **PURPOSE**

The purpose of the Woody Biomass Energy Preliminary Feasibility Assessment Grants is to provide financial incentive for public and non-profit facilities to hire the services of a qualified firm to conduct a preliminary feasibility assessment of integrating a woody biomass energy system.

The objective of a Preliminary Feasibility Assessment (PFA) is to provide the facility manager with preliminary information regarding the technical and economic viability of installing a wood biomass energy system. The PFA is intended to be an *introductory step* for facilities. This approach to assessing projects in stages, beginning with a *preliminary* feasibility assessment, provides a low cost option to better identify the most viable projects to move forward with a more in depth, investment-grade assessment. The PFA will provide general information and direction to the facility managers, assisting them to make a decision on whether to proceed with further analysis, an investment-grade assessment and/or project design and installation. The PFA will mostly focus on evaluating the economic viability of a project, while providing a brief summary of technology and integration options, opportunities and challenges. A typical PFA includes a brief description of the facility heating system, energy usage analysis, breakdown of estimated total project costs, and a life-cycle cost analysis including estimated payback period.

Facilities approved for this funding will be required to select and hire an analyst from the list of firms pre-qualified by the Montana Department of Natural Resources and Conservation (DNRC), provided as Attachment A. Hired analysts will complete preliminary feasibility assessments for wood biomass energy system installations at approved facilities. The minimum scope of work to be provided by the analyst through this DNRC program is attached as Attachment B: Scope of Work.

Woody biomass energy projects will benefit Montana by increasing utilization of forest biomass, reducing costs of treating hazardous fuels, improving forest conditions, providing a more diversified forest product market, retaining jobs in the wood products industry, enhancing economic development opportunities, reducing air emissions from open slash-pile burning, reducing dependence of fossil-fuel based energy sources, and reducing energy costs for facilities.

## **BACKGROUND**

The DNRC manages a Biomass Utilization and Community Wood Energy Program designed to promote and facilitate the utilization of woody biomass for value-added markets including energy. As an incentive for biomass energy installations, the DNRC program offers funding assistance for preliminary feasibility assessments to public and non-profit facilities. Since 2003, the DNRC has sponsored over 60 feasibility assessments at public facilities and provided grant funding to assist in the design and construction of 15 energy projects in Montana. There continues to be interest from additional facilities at varied scales in Montana who have limited resources with which to evaluate project feasibility.

# **GENERAL GUIDELINES AND INSTRUCTIONS**

## **ELIGIBLE APPLICANTS**

Minimum eligibility criteria for grant recipients:

- 1) Eligible applicants are public schools and institutions and non-profit facilities. This may include school districts, universities, hospitals, government entities, tribe-owned facilities, and non-profit organizations.
- 2) Proposed projects must be located within the eligible applicant area defined in Attachment C: Eligible Applicant Area Map.

## **ELIGIBLE ACTIVITIES**

- 1) Hire the services of a pre-qualified analyst to conduct a preliminary feasibility assessment for integrating a woody biomass energy system at proposed facility.

## **APPLICATION PROCESS**

Applications will be processed as received on a rolling basis. Applications are evaluated on a first-come, first-served basis.

1. Applicant submits completed Preliminary Feasibility Assessment (PFA) Application Form (Attachment D) to DNRC with cover letter. DNRC may request additional information pertinent to the application.
2. DNRC conducts a pre-screening of each PFA application to determine the potential likelihood of economic viability for a wood biomass energy system installation at the proposed facility and whether it warrants a PFA by a professional firm.

Factors evaluated in the pre-screening include:

- Installation is proposed for a new facility construction project.
- Facility has a high heat demand, which may also include demand for domestic hot water.
- Facility has relatively high heating costs.
- Facility has an existing centralized (steam/hydronic) heat distribution system.
- The current boiler system is old and due for replacement.
- The estimated cost/btu of wood fuel is less than current cost of fossil fuel/btu.
- Facility is in proximity to a wood fuel source with a reasonable delivered cost.
- There is space available on site for a biomass boiler, fuel storage, and access for delivery trucks.

## **FUNDING AVAILABLE**

DNRC will award, on a reimbursement basis, the full cost of the PFA, not to exceed \$3,500.00. The DNRC reserves the right to offer a different grant amount than proposed by applicants. The applicant is responsible for covering any cost above \$3,500.00. Applicants must consult with the DNRC before incurring any expenses, as pre-award costs are not allowed without written approval from DNRC.

DNRC anticipates awarding a minimum of \$16,000.00 total over the next year to at least 5 public and non-profit facilities in Montana to provide funding assistance for PFAs. Current DNRC funding is limited to sponsoring PFAs in the eligible project area defined in the Attachment C: Eligible Applicant Area Map. The amount of funding may be increased, geographic area expanded, and/or time period extended, dependent on future funding availability.

## **NOTIFICATION AND GRANT AWARD**

Applicants will be notified of DNRC's decision within 3 weeks of DNRC's receipt of complete application materials. Applicants not selected to move forward will be notified of the decision and the reason for denial.

DNRC anticipates signing grant agreements with successful applicants within an additional 3 weeks. The grant agreement will detail the payment and reporting requirements of the grant award. Grant payments will be issued as a single reimbursement check upon the DNRC's receipt of the grantee's final report. The final report will provide detail on the project's expenditures, contractor used, the final assessment, and a report of the grantee's planned next steps given the results of the assessment.

## **GUIDELINES FOR APPROVED PROJECTS AND SCOPE OF WORK**

1. Upon project approval, DNRC requires that the approved facility select and hire a firm from the list of pre-qualified analysts to conduct the assessment.
2. It is the responsibility of the facility to contact the analyst, and negotiate full scope of work and rates. In accepting grant funding from DNRC, the facility is required to hire the analyst to perform the minimum scope of work detailed by DNRC in Attachment B: Scope of Work. If the facility wants an assessment above and beyond the scope of the basic PFA provided by the DNRC Program, the facility may be responsible for covering additional costs.
3. Once an analyst is selected by a facility and cost of services is determined, the facility will submit the name of selected firm and cost of services to DNRC in order for DNRC to establish the grant award amount. DNRC will create a grant agreement with the facility to reimburse applicants for the full cost of the pre-feasibility assessment, not to exceed \$3,500.00. DNRC anticipates signing agreements with successful applicants within 3 weeks of project approval.

In accordance with Montana Code Annotated section 49-3-207, the grantee agrees that the hiring of persons to perform work on the project will be made on the basis of merit and qualifications and there will be no discrimination based upon race, color, religion, creed, political ideas, sex, age, marital status, physical or mental disability, or national origin by the persons performing work on the project.

## **SUBMISSION GUIDELINES**

Applications will be accepted on a rolling basis, and evaluated on a first-come, first-served basis within two granting cycles (rounds).

Round 1 closes February 7, 2012

Round 2 closes June 7, 2012.

Application must include:

- ❑ Cover Letter. Describe applicant's interest in a wood biomass energy installation including potential benefits to the facility and community.
- ❑ Completed Preliminary Feasibility Assessment Application Form (Attachment D)
  - Include a copy of a recent bill for each utility account requested in Sec. VIII of the Application Form.

**Submit Application to:**

Julie Kies, DNRC- Forestry Division Office, 2705 Spurgin Rd., Missoula MT 59804-3199.

**LEGAL AUTHORITY**

The DNRC Biomass Utilization Program and related activities, including this Request for Applications, are authorized by Montana Code Annotated, section 2-15-112(2)(c).

Funding for the grants is provided by ARRA, Public Law 111-5 and the Federal Land Policy and Management Act of 1976, 43 U.S.C. 1737(b), as amended, Public Law 94-579, Section 307(b), which authorizes cooperative agreements for the management, protection, development and sale of public lands.

Applicants awarded funds through the federal ARRA program will be required to provide their Central Contractor Registration (CCR) DUNS number and CAGE (Commercial and Government Entity) Code to the DNRC prior to award.

**CONTACT**

For further information in completing your application, contact:

Julie Kies  
Biomass Utilization Program  
Montana DNRC  
2705 Spurgin Road  
Missoula, MT 59804-3199  
Phone: (406) 542-4280  
[jkies@mt.gov](mailto:jkies@mt.gov)

**ATTACHMENTS**

- Attachment A: List of Pre-Qualified Biomass Energy Analysts
- Attachment B: Scope of Work
- Attachment C: Eligible Applicant Area Map
- Attachment D: Preliminary Feasibility Assessment Application Form

**ATTACHMENT A**  
**Pre-Qualified Biomass Energy Analysts**  
**for**  
**Montana DNRC Biomass Energy Pre-Feasibility Assessments**  
(Updated November 2, 2011)

The following firms are currently pre-qualified to conduct preliminary feasibility assessments for wood biomass energy installations under the Fuels for Schools and Beyond Community Wood Energy Program, administered by the Montana Department of Natural Resources and Conservation Forestry Division. Facilities awarded a Pre-Feasibility Assessment Grant under this program are required to select an analyst from this listing.

FIRM NAME	SERVICES PROVIDED										TECHNOLOGIES EXPERIENCED WITH								SECTORS SERVED						
	PRE-FEASIBILITY ASSESSMENTS FOR BIOMASS ENERGY	INVESTMENT-GRADE ASSESSMENT FOR BIOMASS ENERGY	BIOMASS FUEL SUPPLY ASSESSMENT	BIOMASS ENERGY SYSTEM MANUFACTURER/DISTRIBUTOR	ENERGY ANALYSIS	MECHANICAL ENGINEERING	ENGINEERING/DESIGN	INSTALLATION	COMMISSIONING	FINANCING	HVAC	HYDRONIC	STEAM	FORCED AIR	AUTOMATED WOOD CHIP-TYPE SYSTEM	WOOD PELLET FURNACE/BOILER	INDOOR CORDWOOD	OUTDOOR CORDWOOD	COMBINED HEAT AND POWER SYSTEMS	SCHOOLS	HEALTH CARE	GOVERNMENT	NON-PROFITS	RESIDENTIAL	COMMERCIAL
Biomass Energy Resource Center	X	X	X		X				X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CTA Architects Engineers	X	X			X	X	X		X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Honeywell Int'l, Inc.	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X			X	X	X	X	X		X
Sustainability, Inc.	X	X	X	X	X	X	X				X	X	X	X	X	X		X	X	X	X	X	X		X
Tetra Tech	X	X	X		X	X	X	X	X	X	X		X	X	X	X			X	X	X	X	X	X	X
Wisewood, Inc.	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X			X	X	X	X	X	X	X

**Pre-Qualified Biomass Energy Analysts  
for  
Montana DNRC Biomass Energy Pre-Feasibility Assessments**  
(Updated November 2, 2011)

**Biomass Energy Resource Center**

Contact: Adam Sherman  
43 State Street, Suite 1  
PO Box 1611  
Montpelier, Vermont 05602  
802-223-7770 x. 128  
[asherman@biomasscenter.org](mailto:asherman@biomasscenter.org)

**CTA Architects Engineers**

Contact: Nathan Ratz  
306 West Railroad Avenue, Suite 104  
Missoula, Montana 59802  
406-728-9522  
[nathanr@ctagroup.com](mailto:nathanr@ctagroup.com)  
[nicks@ctagroup.com](mailto:nicks@ctagroup.com)

**Honeywell International, Inc.**

Contact: Thomas Monter  
301 E. Buckles Rd.  
Hayden, Idaho 83835  
Voice: 208-772-1780  
Cell: 208-651-7254  
[thomasmonter@honeywell.com](mailto:thomasmonter@honeywell.com)

**Sustainability, Inc.**

Alaska Wood Energy Associates  
Contact: William A. Wall  
PO Box 988  
Seeley Lake, Montana 59868  
Office: 406-677-5006  
Cell: 406-210-9984  
[williamwall11@gmail.com](mailto:williamwall11@gmail.com)

**Tetra Tech**

Contact: Cameo Flood  
2525 Palmer Street, Suite 2  
Missoula, Montana 59808  
406-543-3045  
[cameo.flood@tetrattech.com](mailto:cameo.flood@tetrattech.com)

**Wisewood, Inc.**

Contact: Andrew Haden  
PO Box 28357  
Portland, Oregon 97228  
503-608-7366  
[andrew@wisewood.us](mailto:andrew@wisewood.us)

Montana DNRC Forestry Division is accepting qualifications from additional firms up to April 14, 2013 and will update the pre-qualified analyst list twice per year in April and October. Request for Qualifications details here:  
<http://dnrc.mt.gov/forestry/Assistance/Biomass/default.asp>.

**ATTACHMENT B**  
**SCOPE OF WORK**

Pre-qualified energy analysts will conduct the following Scope of Work for the pre-feasibility assessment:

**1) Initial Facility Review**

- a) Review facility information provided in DNRC application (furnished by DNRC or facility)
- b) Verify facility information as needed via correspondence with facility
- c) Investigate the current heating system to determine steps to integrate a biomass system
- d) Work with facility staff to understand their needs and existing issues related to the heating and cooling system

**2) Preliminary Site Investigation to include the following:**

- a) Available space (within existing structures or space for newly constructed building)
- b) Street access and space available for fuel storage and deliveries
- c) Any building or site constraints (i.e. topography, permitting, historical preservation, etc.)
- d) Estimate proper size of biomass heating system to meet needs of facility
- e) Based on site information gathered, formulate options for installing a biomass energy system. This may include generating an assessment of a few project options and/or scenarios for different types of technologies, wood fuels and/or financial scenarios.

**3) Preliminary Cost Estimating**

Provide *preliminary* cost estimates for installing a biomass energy system on site. Total project cost estimates will include, at a minimum, cost breakdown of:

- a) design and engineering,
- b) fees and permitting,
- c) mechanical integration to existing or new HVAC system,
- d) biomass energy unit (boiler or furnace package),
- e) structure to house biomass energy unit, conveyance and fuel storage (as needed),
- f) emission controls (if required)
- g) other equipment, materials, and construction costs.

**4) Economic Analysis**

30 year life cycle cost analysis that incorporates, at a minimum:

- a) Baseline data on existing heating system (i.e. fossil fuel costs/unit, average annual fuel usage, average annual heating costs)
- b) Projected volume of wood fuel required to meet heat demand
- c) Estimated wood fuel cost per unit and annually
- d) Total project cost
- e) Projected savings, cash flow analysis and payback schedule

**5) Final Report**

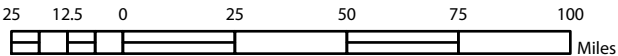
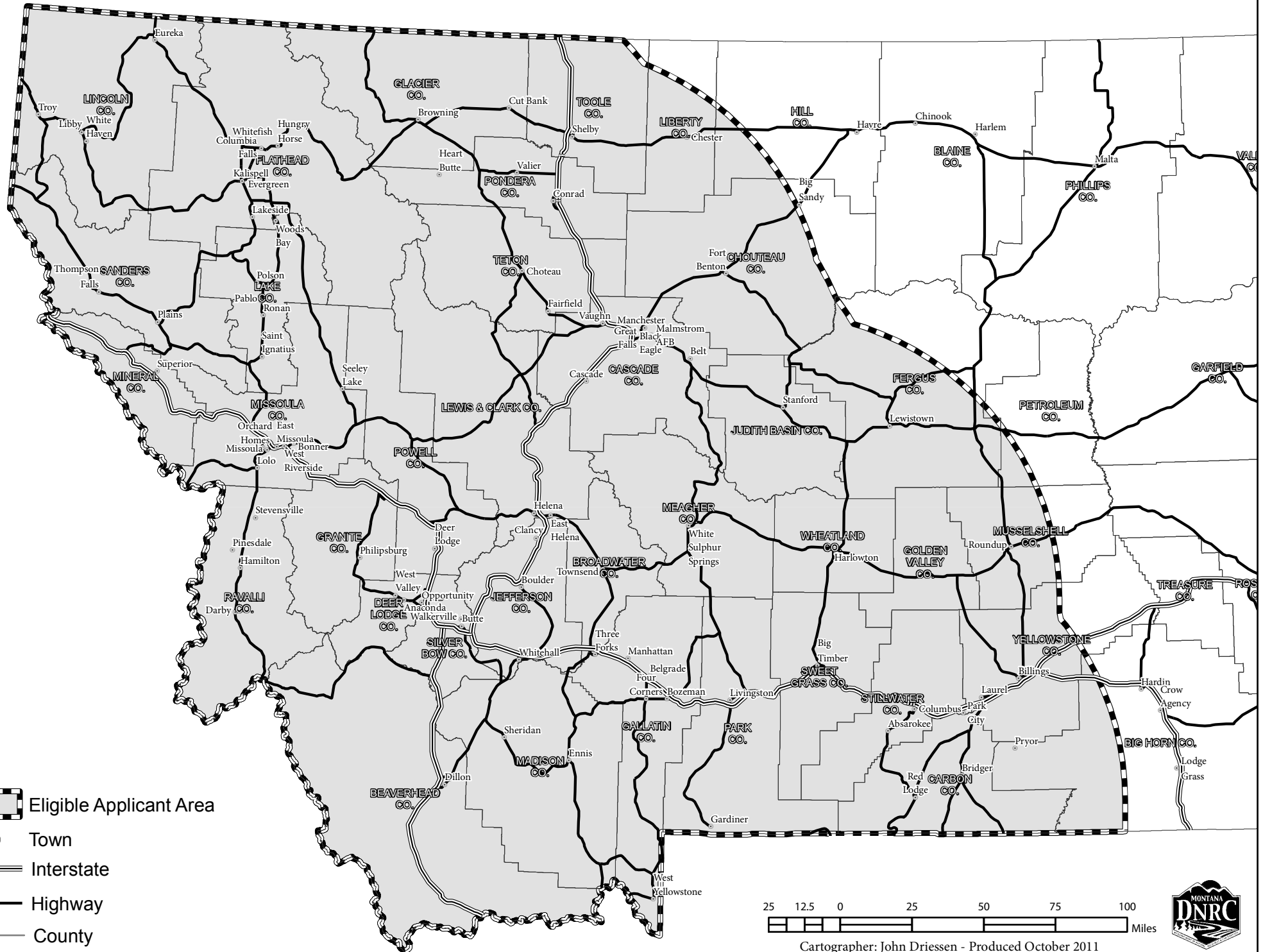
Final report will include:

- a) Executive summary of the preliminary assessment including brief discussion of:
  - the site features and opportunities and obstacles identified
  - the various technology or installation options assessed, if more than one
  - general perspectives of the assessment results, project viability, and recommended next steps
- b) Life cycle cost analyses of all assessed options in easy-to-understand spreadsheet formats

**6) Submit Final Report to both facility and DNRC**

The final report will be submitted to both the facility and DNRC. The analyst will provide 2 hard copies and one electronic copy as PDF to both entities. The analyst may be asked to make a joint presentation to facility staff and DNRC.

# ATTACHMENT C: ELIGIBLE APPLICANT AREA FOR REGIONAL WOODY BIOMASS UTILIZATION GRANTS



Cartographer: John Driessen - Produced October 2011





Montana Department of Natural Resources and Conservation
Community Wood Energy Program

PRELIMINARY FEASIBILITY ASSESSMENT
APPLICATION FORM

COMPLETE THE FOLLOWING INFORMATION:

Date filled out:
By (name):
Facility Name:
City:
Applicant's DUNS #
Applicant's CAGE Code
Principal Contact Person:
Mailing Address:
Phone:
FAX:
Email:

I. FACILITY INFORMATION

Check one:
Existing Facility
New Construction (If new, fill in all available information for the proposed heating system and estimated energy usage.)
Check one:
School
University
Healthcare
Government
Non-profit
Other
Describe:
Size of facility: sq. ft. heated space
No. of occupants or students
Year of construction
Years of major renovations
No. of floors
No. of buildings

II. HEATING SYSTEM

Configuration (check one or more):
Heating plant in one location
Heating plant with exterior wall location?
Different heating plants in different locations; How many?:
Individual, room-by-room heating systems
Boiler room accessible to semi tractor/trailer vehicles
How is space heat generated? (check all applicable):
Hot water boiler
Warm air furnace (in mechanical room)
Gas duct heaters or roof-top systems
Steam boiler
Capacity (BTU or KW)
How is heat delivered to rooms? (check all applicable):
Hot water
Steam
Ducted air
Electric heat
Electric Boiler
Electric baseboard
Electric duct coils
Electric furnace
Heat pumps
Capacity (BTU or KW)

Is current heating system due for replacement soon? YES/NO?

**III. FUEL SOURCES**

What fuels are used? ( check all applicable):

- Natural gas
- LP gas (propane)
- No 2 fuel oil/ Diesel
- Electric
- Other; Type: \_\_\_\_\_

Describe fuel storage (number, capacity location of tanks):

\_\_\_\_\_

\_\_\_\_\_

Is this fuel also for:  other uses;  just space heat?

**IV. DOMESTIC HOT WATER (DHW)**

Uses of domestic hot water (check all applicable):

- Lavatories
- Kitchen
- Gym showers: Heavily used?  Yes  No
- Other large uses: \_\_\_\_\_

What fuels are used? (check all applicable):

- Natural gas
- LP gas (propane)
- Electric
- No. 2 fuel oil
- Diesel
- Other: Type: \_\_\_\_\_

Type of system (check all applicable):

- Single tank-type heater
- Multiple tank-type heaters
- Off heating boiler, with separate storage tank
- Hot water generator with separate storage tank
- Other  
Type: \_\_\_\_\_

Describe location of heater(s), including areas/ uses served:

\_\_\_\_\_

\_\_\_\_\_

Describe fuel storage (number, capacity, location of tanks):

\_\_\_\_\_

\_\_\_\_\_

**V. FUEL USAGE AND COSTS (THIS MUST BE COMPLETED IN ORDER FOR APPLICATION TO BE PROCESSED)**

How much did you spend on the following fuels last year?

- Natural Gas \$ \_\_\_\_\_/year      \_\_\_\_\_ dekatherms (dka)/year
- LP Gas (Propane) \$ \_\_\_\_\_/year      \_\_\_\_\_ gallons/year
- No 2 Fuel Oil \$ \_\_\_\_\_/year      \_\_\_\_\_ gallons/year
- Diesel \$ \_\_\_\_\_/year      \_\_\_\_\_ gallons/year
- Electric \$ \_\_\_\_\_/year      \_\_\_\_\_ kilowatt hours (kWh)/year

Attach a copy of a recent bill for each utility account.

**VI. CONTROLS**

Type of system (check all applicable):

- Thermostats on individual devices, not central control system
- Pneumatic controls system      Manufacturer: \_\_\_\_\_      Approximate Age: \_\_\_\_\_
- Direct digital control system      Manufacturer: \_\_\_\_\_      Approximate Age: \_\_\_\_\_

**VII. OTHER INFORMATION**

Below provide any other information that will help us understand your space heating and DHW systems:

**VIII. BUILDING ENVELOPE**

- Single pane     Double pane glass  
Wall type \_\_\_\_\_ Insulation value \_\_\_\_\_  
Roof type \_\_\_\_\_ Insulation value \_\_\_\_\_
- 

**IX. WOOD FUEL COSTS (IF KNOWN)**

- Wood pellet cost delivered to school/facility \$ \_\_\_\_\_/ton
  - Wood chip cost delivered to school/facility \$ \_\_\_\_\_/ton
  - Distance to nearest wood pellet and wood chip suppliers? \_\_\_\_\_
  - Can logs or wood fuel be stockpiled on site or at a nearby facility? \_\_\_\_\_
- 

**X. DESCRIPTION OF INTEREST**

Submit a cover letter with application form that describes your interest in a wood biomass energy installation including potential benefits to the facility and community.

Submit Application to:

Julie Kies  
Montana DNRC  
2705 Spurgin Road  
Missoula, MT 59804  
Phone (406) 542-4280  
Fax (406) 542-4217  
[jkies@mt.gov](mailto:jkies@mt.gov)