



MONTANA
DEPARTMENT OF NATURAL RESOURCES AND CONSERVATION

WOOD ENERGY PROGRAM

WOOD ENERGY PRELIMINARY FEASIBILITY ASSESSMENT GRANTS

ANNOUNCEMENT AND REQUEST FOR APPLICATIONS

OPEN APPLICATION

SUBMIT APPLICATIONS TO:

tom.perry@mt.gov

PURPOSE

The purpose of the Wood Biomass Energy Preliminary Feasibility Assessment Grants is to provide financial incentive for Montana facilities to hire the services of a qualified firm to conduct a preliminary feasibility assessment of integrating a wood 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 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, which is incorporated herein by reference. 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, which is incorporated herein by reference.

The use of wood for energy benefits Montana by reducing energy costs for facilities, increasing utilization of forest biomass, providing a more diversified forest product market, and enhancing economic development, and providing a local, renewable energy source.

BACKGROUND

The DNRC manages the Wood Energy Program (formerly Fuels for Schools and Beyond) designed to promote and facilitate the use of wood for value-added markets including energy. As an incentive for biomass energy installations, the DNRC program offers funding assistance for preliminary feasibility assessments. Funding for this program is federal funding provided by the USDA Forest Service. Since 2003, the DNRC has sponsored over 70 feasibility assessments and provided grant funding to assist in the design and construction of 14 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

Eligible applicants are public, non-profit and tribal facilities, and private businesses.

ELIGIBLE ACTIVITIES

Hire the services of a pre-qualified analyst to conduct a preliminary feasibility assessment for integrating a wood 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 C, which is incorporated herein by reference) to DNRC including utility data and 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:

- Facility has a high heat and/or hot water demand.
- Facility has relatively high heating costs.
- The estimated cost/btu of wood fuel is less than current cost of fossil fuel/btu.
- Facility has an existing centralized (steam/hydronic) heat distribution system.
- The current boiler system is old and due for replacement.
- 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.
- Installation is proposed for a new facility construction project.

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.

FUNDING AVAILABLE

DNRC will award up to \$3,500 per applicant on a reimbursement basis. DNRC may consider awards of greater than \$3,500 if the applicant is seeking assessment of a number of facilities within a limited geographic or sector-based cluster. The DNRC reserves the right to offer a different grant amount than proposed by applicants. Applicants must consult with the DNRC before incurring any expenses, as pre-award costs are not allowed without written approval from DNRC.

Matching Funds. Program participation requires a minimum 1:1 non-federal to federal cost-match; applicant must contribute at least 50% of the total assessment cost in non-federal match, and the DNRC's federal share will be no more than 50% of the total assessment cost. \$3,500 maximum award.

Funding for this program is federal funding provided by the USDA Forest Service.

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 then create a grant agreement with the facility that details the terms of reimbursement. 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 processed as received on a rolling basis. Applications are evaluated on a first-come, first-served basis.

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 C)
- Copy of a recent bill for each utility account that provided fuel for space heat and hot water, as requested in Sec. V of the Application Form.

Submit Application to:

Tom Perry, DNRC- Wood Energy Program. tom.perry@mt.gov

LEGAL AUTHORITY

The DNRC Forest Products and Biomass Program and related activities, including this Request for Proposals, are authorized by Montana Code Annotated, sections 2-15-112, 18-4-304, and 76-13-136.

Funding for the grants is awarded through Federal Grant # 14-CA-11010000-021 from the United States Department of Agriculture – Forest Service (USFS) under the authority of the Consolidated Appropriations Act, 2014, P.L. 113-76, as amended, and the Food, Conservation, and Energy Act of 2008, P.L. 110-234, as amended. The Catalog of Federal Domestic Assistance (CFDA) # is 10.674; and Federal Grants # 11-DG-11010000-009 and # 12-DG-11010000-030 from the United States Department of Agriculture – Forest Service (USFS) under the authority of the Cooperative Forestry Assistance Act of 1978, Public Law 95-313, as amended. The Catalog of Federal Domestic Assistance (CFDA) # is 10.664.

CONTACT

For further information in completing your application, contact:

Tom Perry, Wood Energy Program Manager
Phone: (406) 542-4210
tom.perry@mt.gov

ATTACHMENTS

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

ATTACHMENT A

Pre-Qualified Biomass Energy Analysts for Montana DNRC Biomass Energy Pre-Feasibility Assessment Grant Program (Updated March 1st, 2018)

The following firms are currently pre-qualified to conduct preliminary feasibility assessments for wood biomass energy installations under the Montana DNRC Biomass Energy Pre-Feasibility Assessment Grant Program. Facilities awarded a Pre-Feasibility Assessment Grant under this program are required to select an analyst from this listing. Other Firms may qualify, please contact DNRC for info about qualifying as a Biomass Energy Analyst

Axmen Energy Group

Contact: Aaron Hanson
7655 Highway 10 West
Missoula, MT 59808
406-239-5184
aaron@axmen.com

McKinstry

Contact: Tom Phillips
228 W. Main, Suite C
Missoula, MT 59802
tomph@mckinstry.com

Precision Energy Services, Inc.

Contact: Mike Oswald
PO Box 1004
Hayden, Idaho 83835
208-772-4457
oswaldmw@pes-world.com

Biomass Energy Resource Center

Adam Sherman
128 Lakeside Ave.
Burlington, VT 05401
(802) 540-7863
asherman@biomasscenter.org

CTA Architects Engineers

Contact: Nathan Ratz
306 West Railroad Avenue, Suite 104
Missoula, Montana 59802
406-728-9522
nathanr@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

Tetra Tech

Contact: Keith Henn VP, Bioenergy
661 Andesen Drive
PittsburghPA 15520
412-921-8398
keith.henn@tetrattech.com

Wisewood, Inc.

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

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 may be asked to make a joint presentation to facility staff and DNRC.



Montana Department of Natural Resources and Conservation
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:

- Public
Private business
Non-profit
Other

Describe:

Year of construction:
Years of major renovations:
Year of most recent energy audit:

Have you implemented significant energy conservation measures related to space heat and hot water? YES / NO ?

- Boiler room accessible to semi tractor/trailer vehicles

How is heat delivered to rooms? (check all applicable):

- Hot water
Steam

Size of facility: sq. ft. heated space

No. of buildings No. of floors

No. of occupants

- Ducted air
Electric heat

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

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

How is space heat generated? (check all applicable):

- | | | |
|--|----------------------|--|
| | Capacity (BTU or KW) | |
| <input type="checkbox"/> Hot water boiler | _____ | |
| <input type="checkbox"/> Warm air furnace (in mechanical room) | _____ | |
| <input type="checkbox"/> Gas duct heaters or roof-top systems | _____ | |
| <input type="checkbox"/> Steam boiler | _____ | |

- | | |
|--|----------------------|
| | Capacity (BTU or KW) |
| <input type="checkbox"/> Electric Boiler | _____ |
| <input type="checkbox"/> Electric baseboard | _____ |
| <input type="checkbox"/> Electric duct coils | _____ |
| <input type="checkbox"/> Electric furnace | _____ |
| <input type="checkbox"/> Heat pumps | _____ |

Other; Type: _____

II. FUEL SOURCES

What fuels are used? (check all applicable):

- | | |
|--|--------------------------------|
| <input type="checkbox"/> Natural gas | <input type="checkbox"/> _____ |
| <input type="checkbox"/> Propane | |
| <input type="checkbox"/> No 2 fuel oil/ Diesel | |
| <input type="checkbox"/> Electric | |

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

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

III. DOMESTIC HOT WATER (DHW)

Uses of domestic hot water (check all applicable):

- Lavatories
- Kitchen
- Showers: Heavily used? Yes No
- Other large uses: _____

What fuels are used? (check all applicable):

- Natural 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 **for heating** last year?

- Natural Gas \$ _____/year _____ therms/year
- Propane \$ _____/year _____ gallons/year
- No 2 Fuel Oil \$ _____/year _____ gallons/year
- Diesel \$ _____/year _____ gallons/year
- Electric \$ _____/year _____ kilowatt hours/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 hot water 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 facility \$ _____/ton
 - Wood chip cost delivered to 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:

Tom Perry
Montana DNRC
2705 Spurgin Road
Missoula, MT 59804
Phone (406) 542-4221
Fax (406) 542-4217
tom.perry@mt.gov

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