

EXPLORING WOODY BIOMASS ENERGY OPTIONS FOR FACILITIES IN THE NEW YORK CITY WATERSHED REGION

PART A – PROGRAM ANNOUNCEMENT & REQUEST FOR APPLICATIONS

PROJECT SUMMARY

For over 15 years, the Watershed Agricultural Council (WAC) has engaged in a variety of initiatives aimed at sustaining the economic viability of farming and forestry in the communities of the New York City Watershed Region. In early 2009, WAC worked with Richmond Energy Associates – a professional consulting firm with extensive experience in wood energy systems – to conduct preliminary biomass heating assessments at several facilities including three public schools. The study, titled [*Biomass Opportunities in the Catskills*](#), showed that shifting 85% of heating loads to wood chips would save users roughly two to three times the current prices paid for conventional fuels. Furthermore, the study discovered that there are several potential chip suppliers in the region that could service an institutional heating market. The study concluded that WAC should further investigate other public or private facilities that might benefit from biomass technology including district energy applications and large users with year-round heating/cooling demands. As part of this strategy, the Council is funding a second round of preliminary biomass heating assessments.

This effort is targeted toward large energy consumers (over 75,000 square-feet) including schools, housing complexes, college campuses, manufacturing facilities or entire communities that are interested in exploring biomass heating options for their building(s). Selected applicants will receive a site visit and detailed report of the economic, environmental and technical feasibility of installing a high efficiency, low-emissions biomass boiler system to accommodate wood as a renewable fuel option.

The project area is focused on Delaware, Dutchess, Greene, Putnam, Schoharie, Sullivan, Ulster and Westchester Counties. Preference will be given to applications that address an opportunity to connect multiple buildings into a district heating loop (rural communities, office complexes and college campuses) and require year-round heat or process steam. All project proposals must be received by the Watershed Agricultural Council no later than **September 16, 2009** to be considered.

BACKGROUND INFORMATION

The Watershed Agricultural Council has joined in a national effort guided by the US Forest Service toward increasing the use of wood residues in biomass energy production in the region. Woody biomass comes in chip or pellet form from a variety of sources including urban trees and construction waste, low value wood from forestry practices, residues from wood products manufacturing, energy crops cultivated on marginal farm lands, and non-commercial forest improvement operations. Use of woody biomass for energy can result in significant savings over fossil fuels while reducing greenhouse gas emissions and keeping energy dollars circulating within a community.

Federal and local support enables WAC to provide funding for institutions interested in renewable energy options to conduct complete preliminary feasibility assessments – usually the first step in any capital improvement or energy efficient project. The “pre-feasibility assessment” is completed to educate facility managers, voters and other decision-makers on whether it makes sense to pursue biomass as a viable energy alternative.

In Vermont, where the *Fuels for Schools* program has existed for over 20 years, fuel costs for institutions converting to wood energy were lowered 30%-50% compared to no. 2 fuel oil and 15% - 20% as compared to

natural gas. Savings when compared with propane or electricity were even more significant. Where it is feasible to make the switch, the movement toward wood energy continues to expand to other facilities including hospitals, correctional facilities, college campuses, commercial greenhouses and manufacturing plants. A wealth of knowledge regarding usage of wood for energy may be found at the Biomass Energy Resource Center's (BERC) website, <http://www.biomasscenter.org>.

PROGRAM DESCRIPTION

Selected applicants will receive a site visit from an experienced wood energy specialist working under contract to WAC. The contractor will survey your facility, collect appropriate energy consumption data and prepare a written report which will detail the technical and economic feasibility of integrating a biomass boiler system including:

- Options and estimated costs for installation of an appropriately scaled biomass energy system
- Projected savings (including a “payback through savings scenario”) compared to existing fuel
- Amount and general specifications of biomass to be consumed annually
- The supply, availability and accessibility of raw material to fuel the system (including the amount and condition of material generated in the vicinity of the site, source of material, cost estimates of material purchase and delivery, and potential contractors that can deliver the biomass)
- Potential source(s) of funding for the biomass system including state construction aid, energy service contracts (ESCOs), carbon offset banks, and federal programs
- Summary of emissions control technologies and review of permits that may be required
- Potential reduction in greenhouse-gas emissions as compared to existing energy source
- Recommendations for additional energy efficiency measures that will compliment a biomass system

Based on the results of this Preliminary Feasibility Assessment, your facility may appear a good candidate for biomass energy. The next step would be to work with an architectural and engineering firm with biomass experience to develop site specific design and construction cost estimates. Additional support is available from this program to assist your facility in taking the next step.

To create a profile of your current energy needs, you may consider using the Wood Energy Calculator available at <http://michiganwoodenergy.org/calculator/calculator.php?action=form1>.

EVALUATION CRITERIA & SELECTION PROCEDURES

Parties seeking selection under this program must submit a completed application packet. The Watershed Biomass Working Group will evaluate each application thoroughly based on the following review criteria:

1. Impact of proposed project on use of local wood residues generated from one or more of the following sources: sawmills, forest management activities, and urban wood waste
2. Scientific or technical merit of project as determined by completion of preliminary information table in RFP-Part C Note: Disregard this portion if you are applying for a community district energy system.
3. Role in serving as a pilot or demonstration facility and ability to pursue full retrofit or installation if study results are favorable.
4. Demonstrated interest or commitment to renewable energy projects (through previous completion of energy audits, preliminary engineering assessments, or other energy-related initiatives)
5. Demonstrated of organizational commitment to project. i.e. written statement of approval from organization's governing board.

Applications will be reviewed and ranked based on the evaluation criteria. The WAC Forestry Program selects proposals and decides on specific allocation of available funds.

The Working Group will not evaluate incomplete applications. The Council reserves the right to reissue this request if no applications adequately meet the evaluation criteria. Selected applicants may be required to sign a Cooperator's Agreement and provide pre-arranged access to their facility by a biomass energy contractor. Applicants may be asked to provide additional documents such as organizational reports or, financial statements as necessary. A summary statement of the review and evaluation by the committee will be provided to applicants upon request.

The Northeastern Area Division of State & Private Forestry of the US Forest Service provides significant funding to the WAC Forestry Program to support forestry/wood products-related economic development activities and projects within the NYC Watersheds. These funds are in the form of grant money and are used to:

- Promote forestry as a preferred land use for protecting water quality.
- Promote and enhance regional economic activity within the forest/wood products industry.
- Improve the economic viability of forestry as an enterprise within the NYC Watersheds.
- Support the development of business relationships between wood processors and wood users in the NYC Watershed.

PROJECT REPORTING

Selected applicants will be notified by mail and work will commence in October 2009. The contractor will be providing periodic updates to WAC and the facility personnel on relevant findings that surface during the project. When the contractor completes all phases of the study, each site will receive three hardcopies and a PDF file of the final report and one resource binder with pertinent information to aid an organization in moving forward. Participants may be required to complete a brief exit interview to evaluate the success of this cooperative program.

ELIGIBILITY

Any municipality, institution, organization, or business in a NYC Watershed county (Delaware, Dutchess, Greene, Putnam, Schoharie, Sullivan, Ulster and Westchester) is eligible to submit an application under the Watershed Biomass Program. Applicants outside these counties may also submit applications for review. However, the project must show positive economic impacts to forestry in the above counties previously listed... Preference will also be given to applications that address an opportunity to connect multiple buildings into a district heating loop (rural communities, office complexes and college campuses) and require year-round heat or process steam.

REQUIRED MATERIALS FOR APPLICATION

Application materials can be recreated on your computer as long as they follow the exact format as the enclosed forms. Handwritten application materials will not be accepted. Additional copies of the application (either electronic or paper) can be obtained by contacting the WAC office.

The following materials must be submitted to the WAC as a complete package for consideration under this program:

1. Completed application with appropriate signatures - PART B

2. Completed Table of Preliminary Questions for Woody Biomass Application - PART C
3. Completed Energy Plan - PART D

SUBMISSION GUIDELINES & DEADLINES

All application materials must be received at the WAC office before 5pm on **September 16, 2009**. To inquire about assistance with application development contact Collin Miller at (607) 865-7790 ext 112.

NOTE: The Review Committee will not evaluate incomplete applications. Make sure your application package is complete! Applicants will be notified by mail of their selection status within 4-6 weeks of the application deadline.

COMPLETED APPLICATIONS MAY BE MAILED, FAXED, OR E-MAILED AS A PDF OR MS WORD ATTACHMENT TO:

Collin Miller, CF
Wood Products Utilization & Marketing Specialist
Watershed Agricultural Council
33195 State Highway 10
Walton, NY 13856
Phone: (607) 865-7790 ext112
Fax: (607) 865-4932
collinmiller@nycwatershed.org

Major funding for the Watershed Woody Biomass Program is provided by the Rural Development through Forestry: Economic Action Program administered by the US Forest Service Northeastern Area's Division of State & Private Forestry. Significant technical assistance for this project is also provided by the New York State Department of Environmental Conservation.

*The Watershed Agricultural Council (WAC) is a non profit organization with offices in Hamden, Walton and Yorktown Heights. WAC's mission is to support the economic viability of agriculture and forestry through the protection of water quality and the promotion of land conservation in the New York City watershed region. The WAC is funded by New York City Department of Environmental Protection, the U.S. Department of Agriculture, the U.S. Forest Service and other federal and foundation sources.
The WAC is an equal opportunity employer and provider.*

**WOODY BIOMASS PROGRAM APPLICATION
PART B - INFORMATION FORM**

Date: _____

Name of Company or Institution submitting application: _____

Contact Person: _____

Name of Owner or Chief Operating Officer (if different than above): _____

Mailing Address: _____

City/State/Zip: _____ County: _____

Daytime Business Telephone Number: _____

Business Fax Number: _____

E-Mail Address: _____

Authorized Signatures: The signature below is that of the person authorized to testify as to the accuracy of this application.

Signature: _____ Date : _____

Title: _____

FOR COUNCIL USE ONLY

Date Reviewed: _____ Approved: ___ Yes ___ No* Amount Approved: \$ _____

Signature of Working Group Chairman: _____

Signature of WAC Officer: _____

* Reason for denial:

PART C - PRELIMINARY QUESTIONS FOR WOODY BIOMASS PROGRAM APPLICATION

Name of Applicant Organization or Facility: _____

Location: _____

Number of Buildings Being Heated at this Facility: _____

Total Square Footage Being Heated at this Facility: _____

(Applicants pursuing community heating districts proceed to Part D)

Types of Heating Systems Employed	Fuel Units Consumed Annually	Installation Year	Year of Last System Update	Square Footage Being Heated
Natural Gas	cu. ft.			
Fuel Oil (No. ___)	gal.			
Coal (Hard / Soft)	ton			
Wood/Biomass Specify _____	ton			
Electric	kWh			
Electric Ground Source Heat Pump	kWh			
Other Specify _____	_____			

* Note: The capital costs for installing a wood energy system can be significantly higher than conventional systems. This is largely due to the chip storage house and handling equipment required. Therefore, paybacks usually take longer. However, as the cost of fossil fuels rise, converting to woody biomass energy will offer immediate savings and take less time to realize a full return on the investment. Experts agree that paybacks within 10 years of installation make the best case for woody biomass energy.

It is highly recommended that applicants visit www.michiganwoodenergy.com to complete a preliminary financial feasibility check using the Wood Energy Calculator. For a complete excel spreadsheet program visit the Wood Fueled Boiler Financial Feasibility Program at <http://forest.wisc.edu/extension/boilermanual.htm>. Reviewing your energy bills in these formats will provide you with an estimate of the simple payback period of converting to wood and thus, whether or not to pursue funding through this program.

Disclaimer: The estimates generated through these calculators do not consider the additional savings gained when combining biomass with other energy saving measures (i.e. weatherization, thermal storage, combined heat and power). Therefore, it is suggested that applicants review other potential building performance improvements that could occur prior to or in conjunction with a biomass boiler installation.

APPLICATION PART D - ENERGY PLAN

Name of Company/Organization submitting application: _____

The ultimate goal of this project is to identify organizations that demonstrate the highest likelihood of completing successful installation of a renewable wood energy system dependant on encouraging results from the preliminary feasibility assessment.

In the space below, summarize the short and long-term energy goals (2-5 years) for your organization/company and how you feel that the Watershed Biomass Program can help you achieve those goals. Provide as much detail as possible about your current energy outlook (including recent fuel consumption patterns, energy needs, costs and budgets, etc.), previous history of energy efficiency improvements at your facility, institutional commitment for adapting new technology and results from the fuel cost calculator simulation tools provided earlier in this application.

(If you need more space, attach and label additional pages including a letter or statement from your organization’s governing board. Refer to the evaluation criteria when completing this portion of the application.)