



Best Practices in Wood Waste Recycling

Quality Specification for Hogged Fuel

Material: Wood Waste

Issue: *Hogged fuel is typically purchased by volume, unless the user has installed scales for weighing. Due to the hog fuel combustion process used by the end user, the size and BTU value of the wood waste will be the determining factor of the purchase price. Depending upon the type of boiler being utilized, wood waste high in fines may not be acceptable. Also, material high in moisture may lead to a reduction in the price paid for the feedstock. Most hog fuel fired systems include their own screening and shredding system to assure a quality control step in sizing the material before it is introduced into the interim storage/surge bin feed system.*

Best Practice: This best practice recommends that processors and end users come to a clear, written understanding of quality requirements. Written specifications for acceptable wood waste feedstocks should be developed and mutually agreed upon. A means to test for compliance with these specifications should also be agreed upon.

Feedstock specifications will vary from end user to end user. These differences are due to differences in processing equipment and handling techniques. Wood waste processors should develop specifications for each individual customer they will supply, and these specifications should be made part of a written contract or letter of agreement that stipulates other important conditions (price, volume, etc.).

Provided below are general specifications which are intended to provide a starting point for negotiations between processors and end users. The limits shown can also be used by a processing facility to examine the feasibility of achieving the specifications for this type of market, although the final determination of marketability should rest on a more detailed local analysis of end users and their specifications.

Wood Species

All species are acceptable for hogged fuel.

Acceptable Geometry

A load with greater than 1/3 sawdust may be unacceptable. Wood fuel must be reduced to three inches in all dimensions. Coarse and shredded wood waste is acceptable as hogged fuel.

Maximum Contaminant Levels

Wood fuel shall be free of vegetation, rocks, dirt, metal, or other non-combustible material. Plastic, paper, slag, or wood that has been painted, coated, or treated are unacceptable. Wood transported or stored in saltwater is unacceptable.

Moisture

A load with greater than 60 percent moisture content is unacceptable. The monthly weighted average moisture should not exceed 55 percent.

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Miscellaneous

Wood fuel stockpiled for more than 3 months may be unacceptable. While the wood material may still have some fuel value, it will generally have a lower BTU value which could then be unacceptable to the boiler system.

Implementation: Boiler equipment manufacturers, and air pollution control equipment manufacturers, should supply end user boiler plant operators with clearly defined fuel specifications for their equipment. These specifications include the fuel particle sizing structure, heating value design assumptions, ash content, and numerous other fuel related specifications considered in the final design and operating permit conditions. Boiler operators should attempt to purchase hog fuels as close to the supplied specifications as possible, due to the long-term operational and performance warranties given by the boiler manufacturer and the high cost of the unit. It is essential for the hog fuel suppliers in the region to communicate as soon and often as possible with the boiler operator about the type, quantity, BTU content, moisture levels, in-feed characteristics, contamination types and levels, and supply assurance of hog fuel that might be made available to the boiler system.

Benefits: The type of specifications that accompany a hog fuel boiler system are usually very lenient, allowing a wood waste processor to meet them with a minimum of additional quality controls. Therefore, wood processors should be able to address this marketplace with marginal new costs. The hog fuel market outlet is typically a very large industrial or small size utility boiler with a capacity much greater than is supplied by a single wood processing facility. Therefore, the end user is often in a spot market purchase mode to compliment the firm deliveries that may provide the baseload fuel supply for the site. Hog fuel purchasers can provide representative fuel specifications to processors who can check their current capability to supply the specified product at the price negotiated. Depending on the value of the wood waste to the processor and the level of processing required, processors and end users can decide if the deal would work.

Application Site: This Best Practice applies to wood-waste processing facilities.

Contact: For more information about this Best Practice, contact CWC, (206) 443-7746, e-mail info@cw.org.

References:

1. Brickner, Robert. Gershman, Brickner & Bratton, Inc. Falls Church, VA.
2. Murphy, Michael. Energy Products of Idaho. Coeur d'Alene, ID.
3. *Small-Scale Biomass Fueled Cogeneration Systems: A Guidebook for General Audiences*, prepared for Southeastern Regional Biomass Energy Program TVA. Muscle Shoals, Alabama. December 1993.
4. *Wood Products In The Waste Stream: Characterization and Combustion Emissions*. New York State Energy Research and Development Authority. Nov. 1992 (Vol. 1 and Vol. 2).

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