Producing quality wood fuel

Biomass derived from any source will probably require treatment before it can be sold and delivered as a solid biofuel. The biomass may require chipping or shredding from large material to the size required by a customer.

Solid biofuels may be derived from wood, agricultural herbaceous crop residues, or urban wood. It is generally referred to as wood fuel because wood is the most common source of biomass. Treatment from raw source biomass into fuel may require sieving to get the specified particle size, drying to the required moisture content, and removal of fines and contaminants.

Wood fuel should be specified in a contract for sale and purchase so that the buyer and seller know exactly what is expected. Technical Guide 6 "Contracting to deliver quality wood fuel to customers" sets out best practice for the buying and selling of solid biofuels. The production of quality wood fuel that commands a good price depends on how it is produced, transported and stored. The following Guide will assist with the production of quality fuel.

- Good Practice Guide – Production of Wood Fuel from Forest Landings The focus of these guidelines is on producing wood fuel from forest harvest residues collected at landings – currently the largest unused source of woody biomass. Aimed at experienced forestry contractors, this guide outlines proven methods for extracting wood fuel from forest landings.

Procedures for verification of fuel quality is set out in best practice Technical Guide 5 "Standard methods for verifying the quality of solid biofuels".

Biomass can be treated into a pellet form which has different handling and combustion characteristics from chip or hogged fuel. Wood pellets are made to specific international standards as set out in Technical Guide 1 "Solid biofuel classification guidelines". Quality wood pellets are usually certified by international certification bodies DIN Plus or EN Plus.

Bioenergy Association manages a Wood Fuel Suppliers Accreditation Scheme which provides for independent third party auditing of wood fuel suppliers to ensure that they are delivering fuel that meets the customers contracted requirements.

For further information see IEA Bioenergy "Biomass pre-treatment for bioenergy".

Thermal pre-treatment of biomass

Thermal pre-treatment of biomass to be used as fuel can substantially help to overcome inconsistencies of heating value and homogeneity. Thermal pre-treatment can also reduce bulk density and increase energy density. Thermal treatment processes are still emerging and are not yet fully commercially proven. They can include pyrolysis, gasification, and torrefaction. For more information refer to IEA Bioenergy "Thermal pre-treatment of biomass for large-scale applications".