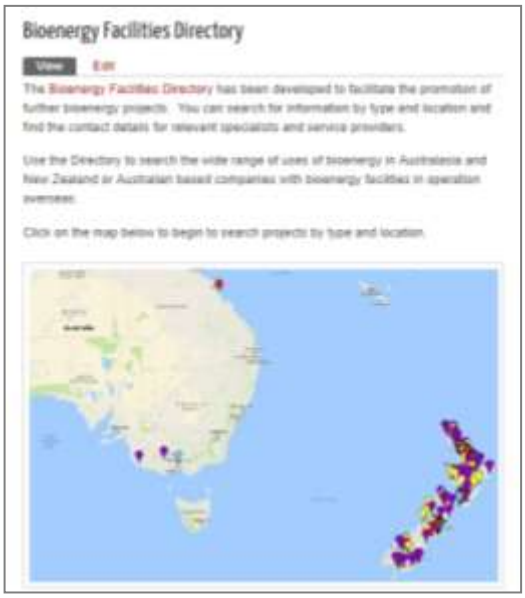
Wood fuel production technology

Australiasia is well served with the latest modern technology and equipment for wood fuel harvesting, production and use.

There is a long history of the collection and burning of wood for heat. This is both in the residential and the commercial sectors. However, in the last decade the equipment available in both sectors has improved significantly. This is largely as a result of requirements on emissions to air and improvements in energy efficiency.



Today in Australasia a wide range of heat plant is available in a range of sizes and with technologies to suit different applications. The fuel required for each boiler type is specific to that boiler and thus the fuel produced for combustion in it must be consistently and reliably produced.

Demonstration

Wood fuel is produced by a number of specialist fuel producers. Use the interactive map on the Bioenergy Facilities Directory to find fuel suppliers in each region who can demonstrate the technology and equipment they use to produce specification compliant fuel.

Wood fuel harvesting and production technology

Wood fuel can come from a wide range of sources: [BC1]

- Forest harvest residues [BC2]
- Wood processing residues
- Purpose grown crops
- Agriculture residues[BC3]

Other biomass fuels can be produced from arborist, urban waste [BC4]and herbaceous biomass[BC5]. If they are not wood then they are referred to as woody fuels and have very different characteristics.

Residues from each of these sources can be collected and processing into chip, pellets or hog fuel. This material can be trucked and sold to a heat plant user as fuel. The quality of the wood fuel depends on the process of collection, storage [BC6]and processing. High quality processing residue chip, which gets the highest sale price, is carefully graded and does not include contaminants. Lowest grade chip or hog such as from forest harvest residues, which is thus the cheapest, often has a number of contaminants arising from the processing methodology for example if the chip is put on the ground after chipping or hogging then it can often collect stones and dirt which will degrade the quality.

Some of the biomass types, particularly woody biomass, may require drying to get the fuel to be specification specific[BC7].

- Good Practice Guide Production of wood fuel from forest landings

Sources of equipment

Suppliers of wood fuel collection and processing equipment are listed in the Bioenergy Association wood energy equipment catalogue

Solid biofuel classification guidelines - Technical Guide 01

Bioenergy Association has developed a Solid Biofuel Classification Guidelines so that the wood fuel can be more accurately described to a potential buyer. Copies of the Solid Biofuel Guides are available free to Bioenergy Association members or for purchase for non members – see here for a summarised version.

Sale and purchase of wood fuel

In order to assist with the sale and purchase of wood fuel, the Bioenergy Association has developed a 'model' Sale and Purchase Contract templates for the sale and purchase of wood fuel. It is included within Technical Guide 6: Contracting to deliver quality wood fuel to customers

The methods for verification of the characteristics wood fuel are set out in Technical Guide 05: Standard methods for verifying the quality of solid biofuels

For the latest information on these model contract templates, or if you would like to contribute to their development, contact the Bioenergy Association Executive Officer.

Fuel testing

Solid biofuel (excluding wood pellets) is often not a homogenous product so requires regular testing to ensure that the fuel delivered to a customer is specification specific.

- Technical Guide 05: Standard methods for verifying the quality of solid biofuels
- https://www.usewoodfuel.org.nz/solid-biofuel-testing
- Accredited biofuel testing laboratories