



Solid biofuel best practice guides

Bioenergy Association

The Bioenergy Association publishes best practice Technical Guides. These are sector guides and are similar to Publicly Available Specifications (PAS) in that unlike Standards which are prescriptive, PAS are informative. The Technical Guides relevant to solid biofuels are:

- [Technical Guide 01: Solid biofuel classification guidelines](#)
- [Technical Guide 02: Guidelines for the conversion of solid fuel underfed boilers from coal to wood pellet](#)
- [Technical Guide 03: Guidance for the safe operation of small- scale wood fueled heat plant](#)
- [Technical Guide 04: Tender guidelines for the specification, supply and installation of wood energy plant](#)
- [Technical Guide 05: Standard methods for verifying the quality of solid biofuels](#)
- [Technical Guide 06: Contracting to deliver quality wood fuel to customers](#)
- [Technical Guide 10: Consultant/specifier practice paper for wood fuel industrial and commercial heating systems](#)
- [Technical Guide 14: Best practice guideline for lifecycle analysis of heat supply projects](#)

The full list of Bioenergy Association Publications can be found in [Information Sheet 11](#).

Energy Efficiency Conservation Authority (EECA) – Guides

These can be accessed via the Bioenergy Association publications and resources webpage [here](#)

- [SNZ PAS 5311:2021 Biomass boilers for small and medium heat loads](#) This publicly available specification (PAS) is to provide best practice guidance to support the adoption of low-emission biomass boiler systems in commercial, institutional, and industrial heat applications. This PAS provides advice and information on biomass boiler systems for small to medium heat loads (50 kW to 2 MW) providing hot water below 100°C. Within this document, a biomass boiler system is one fuelled by wood chip, wood briquettes, wood pellets, or other biomass. This PAS includes both technical and non-technical guidance on: evaluating heat demand and energy efficiency; generic site requirements; greenhouse gas and local particulate emissions; fuel quality, supply, reception, storage, and handling; operation and maintenance; system efficiency; seasonal efficiency; regulatory and non-regulatory health and safety aspects; and consenting.
- [Technical Guide 8.0: Process Heat](#) - This is a guide to best practice in improving energy efficiency in boilers, steam systems, hot water systems and process heating.

- [Technical Guide 9.0: Production of wood fuel from forest landings](#) - Wood fuel is a clean and renewable energy source. The focus of these guidelines is on residues from 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.
- [Wood energy: Using wood as a renewable energy sources](#) - This guide outlines the potential of wood energy within the New Zealand business environment. It outlines the strong environmental and economic benefits, as well as the emerging opportunities.
- [Technical Guide 13.0: Best practice boiler tuning procedure guidelines](#) - In 2010 EECA reviewed the potential for improving efficiency of boilers operating in New Zealand. The potential for improvement is vast and this boiler tuning procedure is one of the main recommendations from EECA's review.
- [Transport guidelines for wood residue for biofuels](#) - In any system for delivering wood residue as biofuels from forests or wood processing sites, transport is a key factor and contributes significant cost.

New Zealand Forestry Owners Association (NZFOA) – Guides

- [Facts and Figures: New Zealand plantation forestry industry](#) - This Guide from NZFO presents all you need to know on the plantation forestry sector in New Zealand. The Guide is produced by the Forest Owners Association in co-operation with the Ministry for Primary Industries, presents a compelling summary of this important industry. It portrays a sector that contributes around three per cent of New Zealand's GDP, and generates export earnings of \$4.7 billion per year.

New Zealand Home Heating Association (NZHHA) – Guides

- The [NZ Home Heating Association](#) provides advice to the residential sector on the use of wood fuel and wood fuel appliances.

A number of things should be considered when using wood for heating. It's important to understand the type of fuel wood that is available, its advantages and limitations, and to be aware of the various types of heating appliances in order to select the best fuel for that application. It is also essential to know how to light a good fire that does not smoke.

Ministry for the Environment (MfE) - Guides

- The Ministry for the Environment (MfE) takes a lead role in air quality advice and guidance. The use of efficient clean burning wood fuel appliances has the potential to make a big difference to the air quality in several regions in New Zealand. The combination of good quality fuel and efficient appliances is the best combination for minimal air quality impact. The Ministry has the lead on the development of the National Air Quality Standards.
 1. [National List of Authorised Wood Burning Appliances.](#)
 2. [Frequently Asked Questions on Wood Burners.](#)
 3. [New Zealand's Greenhouse Gas Inventory 1990-2019](#) (Published may 2021)

International Guides

- [A Guide to utilising combined heat and power in the wood resources industry \(2012\)](#) - This guide aims to educate members of the forestry products industry on how to use a source of woody biomass in a combined heat and power system, and provides resources for the development of potential projects. In addition to a thorough overview of CHP concepts, this guide also contains technical information for woody biomass fuels – (US Publication).
- [Wood chip heating systems \(a guide for institutional and commercial biomass installations\)](#), Timothy M Maker - Different readers will use this guide differently. For example, a school board member whose school is considering a wood-chip heating system may want only a brief overview of automated wood systems and related issues, while a mechanical engineer who has been hired to specify and oversee a system's installation might want to read the guide cover to cover.
- [Resources and guides on woody biomass utilisation](#), University of California
- [Woody Biomass Feedstock Yard Business Development Guide](#) - A resource and business guide to developing a woody biomass collection yard. USDA Forest Service, 2010
- [Woody Biomass Utilisation Desk Guide](#) - USDA Forest Service, August 2007
- [A Planning Guide for Small and Medium Size Wood Products Companies](#) - USDA Forest Service NE Area, 2nd Edition, July 2005
- [Introduction to Woody Biomass](#) - Woody Biomass Utilisation - Draft introduction to woody biomass as a feedstock
- [2008 Farm Bill Renewable Energy Provisions](#) - USDA fact sheet on Title IX of the 2008 Farm Bill which focuses on the Renewable Energy Provisions
- [Wood Heat Solutions \(low res for on screen - 2MB\)](#) - A Community Guide to Biomass Thermal Projects: produced by Resource Innovation at the University of Oregon.
- [Wood Heat Solutions \(high res for printing - 13MB\)](#) - A Community Guide to Biomass Thermal Projects: produced by Resource Innovation at the University of Oregon.
- [IG003 - Woody Biomass Definitions and Conversions Factors](#) - A simple glossary of terms, units used and conversion factors relating to woody biomass
- [IG002 - Use of Wood as a Media for Odor Control](#) - The results of a brief literature and internet search for information relating to the use of wood chips as an air filtration media
- [IG001 - Formaldehyde Use in Wood Based Panels](#) - A look at the new formaldehyde standards adopted by the California Air Resource Board (CARB) in April 2007 and their potential impacts on the panel board industry

If you are aware of other Guides and Resources please [contact us](#)

Note that safe practice technical standards for use of solid biofuels are listed in <https://www.usewoodfuel.org.nz/documents/admin/TNSB17-Technical-Standards.pdf>