

This is a sample of Technical Guide 05.

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<http://www.bioenergy.org.nz/resource/tg05-verifying-solid-biofuel>

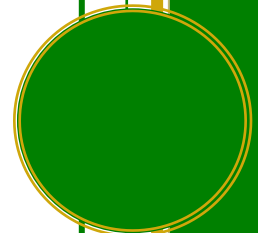
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# Standard Methods for Verifying the Quality of Solid Biofuel

Summary

**Bioenergy Association Technical Guide 05**

Version 1  
January 2015



**About this Guide:**

1. The compilation of this Technical Guide has been facilitated by contributions and oversight of the relevant expert members of the Bioenergy Association.
2. The aim of the Association's Technical Guides is to encourage delivery of high quality and consistent best practice bioenergy solutions. These Guidelines are voluntary but essentially provide a regulatory framework for the New Zealand bioenergy and biofuels sector.
3. The Guide is an outcome of industry discussion and collaboration. It captures the collective technical knowledge of a range of relevant leading bioenergy sector personnel. In addition, it benefits from the collective review and use by relevant asset owners, guide users, policy makers and regulators.
4. This guide is provided in good faith as an addition to the ongoing body of knowledge relating to the bioenergy and biofuels sector in New Zealand and Australia. However, as the guide is general and not specific to any application the Association and none of those involved with its preparation accept any liability either for the information contained herein, or its application.
5. As with all Bioenergy Association technical guidance documents, this guide is a 'living document' and will be revised from time to time and reissued, as new information comes to our attention. If you have suggested additions to this guide please contact [admin@bioenergy.org.nz](mailto:admin@bioenergy.org.nz).
6. Any enquiries regarding these guidelines should be referred to:  
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**CAVEAT**

Bioenergy Association recommends that any party undertaking a project to upgrade or replace a bioenergy facility should undertake a full evaluation of all possible options prior to fixing on a specific new project solution.

As a decision maker, it's important to understand the pro's and cons of each option and have them set out by an appropriate expert in a way that ensures they are easily comparable. Too often a client rushes into a solution without properly evaluating all the options.

These Technical Guides are only a guide and users should ensure that they have engaged appropriate expert to consider their specific application.

## EXECUTIVE SUMMARY

This document provides the recommended methods for determining the quality of solid biofuels for the New Zealand and Australian wood fuel markets and for Bioenergy Association accreditation of fuel suppliers. Also included are standard methods for sampling and testing. These methods are to be used where any question or dispute arises regarding the quality of solid biofuel. The methods presented build on version 1 of the Bioenergy Association Wood Fuel Classification Guidelines and subsequently reviewed by the solid biofuel supply sector.

Internationally there are a number of standards for sampling and testing the quality of solid biofuels. This document sets out the recommended standard most relevant to New Zealand. Discussion on the alternative standards that could be used is included in the CRL Energy report which is provided in Appendix 2.

In version 7 of The Wood Fuel Classification Guidelines the document has been widened so as to include a broader range of solid biofuels. As a consequence the Classification Guidelines are now referred to as the Bioenergy Association Solid Biofuel Classification Guidelines.

Summarised Version

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# 1. Introduction

The 'Bioenergy Association Wood Fuel Classification Guidelines' were developed by the Bioenergy Association of New Zealand (Bioenergy Association) in partnership with the Energy Efficiency and Conservation Authority (EECA) and these were revised and widened in scope in 2013 to become the 'Bioenergy Association Solid Biofuel Classification Guidelines'. These guidelines are voluntary standards developed for New Zealand and Australian conditions and wood fuel trading environment and they were based on existing quality standards for solid biofuel energy in Europe, New Zealand and Australia. The guidelines provide a means for wood fuel suppliers to classify their wood pellets, hog fuel, wood chips, firewood etc and to provide quality assurance to fuel users. A copy of the Guidelines can be found at <http://www.usewoodfuel.org.nz> EECA and the Bioenergy Association is promoting the Guidelines throughout the sector.

The initial version of the Bioenergy Association Wood Fuel Classification Guidelines included reference to testing standards and methodologies. When the Guidelines were widened to include other solid biofuels it was considered appropriate to move the verification sampling and testing methodologies into a separate Technical Guide.

To ensure an efficient solid biofuels (wood fuel<sup>1</sup>) supply market, it is important that suppliers and end users understand the range of biomass fuels that are being traded and to ensure that purchasers of solid biofuels can be confident that they are receiving what they ordered.

If market participants are to work with the Classification Guidelines then it is important for them to have consistently agreed methods for verification of quality. This requires agreed standards and methodologies on sampling and testing of the fuel. They also need to be able to access facilities or laboratories that have been approved to undertake an agreed and standard set of tests to ensure the quality of the fuels.

While this Technical Guide covers all solid biofuels the primary focus in New Zealand is and is likely to be on wood. Provision is however made in this Guide for additional biomass fuels to be added at any time.

This document sets out what testing methods should be adopted by the solid biofuel industry to support the Solid Biofuel Classification Guidelines and to verify the quality of solid biofuel being delivered to customers. These testing standards are provided to encourage consistency and predictability among fuel suppliers and to provide the framework for accrediting fuel suppliers. It is recognized that alternative testing methods do exist and in some circumstances can be used – but in such cases evidence should be provided to validate the use of such alternatives. The Bioenergy Association is open to receiving recommendations for inclusion of these alternative methods into these Guidelines.

Internationally there are a number of standards for sampling and testing the quality of solid biofuels. This document sets out the recommended methods that should be used for sampling and testing solid biofuels

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<sup>1</sup> Wood fuel is often used as a synonym for solid biofuel as the largest amount of solid biofuel is in the form of wood fuel.

and which will be compliant with the Bioenergy Association's Fuel Supply Accreditation Scheme. These standard methods are applicable to New Zealand and Australian conditions and have been developed with input from the solid biofuel supply sector.

The recommended methods provided in this document are based on the standard international methods, but they are not the same and have been modified and simplified to allow solid biofuel operators to adopt a more pragmatic approach to fuel sampling, testing and reporting for accreditation purposes.

Discussion on the alternative standards that could be used is included in a report prepared by CRL Energy "Review of Wood Fuel Testing Standards" which is included in full in Appendix 2.

A list of appropriate testing laboratories in both New Zealand and Australia is also included in this document. This list will be periodically updated and posted on the Bioenergy Association website: [www.usewoodfuel.org.nz](http://www.usewoodfuel.org.nz)

This document should be read in conjunction with the Bioenergy Association Technical Guide 1 "Solid Biofuel Classification Guidelines".

Where additional testing methods need to be added, then this can occur during periodic updates of this document.

## 1.1 Scope

The testing and sampling methods are presented in two section sections, namely:

1. The recommended sampling and testing methods that comply with the requirements for the Bioenergy Association Wood Fuel Supply Accreditation Scheme. These have been simplified from the formal international standards and are recommended for everyday use in New Zealand and Australia.  
and
- 2 The standard international sampling and testing methods which are the bench mark sampling and testing procedures from which the recommended methods were derived. These are to be used in any situation where there is a dispute or there is an issue with the recommended methods.

## 1.2 Document outline

Section 2 considers the recommended sampling and assessment methods for the Bioenergy Association Accreditation scheme.

Section 3 provides the standard methods for sampling and testing of solid biofuels and these are included here for reference only.

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