

Woodfuel Boilers Installation Design Guidance (Calculators and Spreadsheets)

Summary

Three calculators developed to assist with the design of wood-fuelled installations have been created by Technical Development (TD), providing guidance for:

- sizing of woodfuel boilers
- assessment of fuel requirements
- comparative cost of energy production.

Introduction

The development of wood use as a fuel is an objective across the FC in Great Britain to support the development of the woodfuel industry and markets, meet challenging targets to reduce carbon emissions, and that could lead to an increase in the area of woodland in active management.

To support the forest industry in achieving this target TD develops and promotes information and guidance on the woodfuel supply chain. Following the identification of specific requirements relating to the design of wood-fuelled installations, Technical Development developed Excel-based calculators in 2009–2010 providing guidance for:

- the sizing of woodfuel boilers
- the assessment of fuel requirements
- comparative cost of energy production.

These tools have been made available via the Biomass Energy Centre (BEC) website in 2009, and feedback has been received suggesting improvements to the existing tools or suggesting the development of additional modules.

This project aims to develop and deliver a second generation of improved decision support tools

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Objectives

1. To produce an updated version of the tools
2. To make the tools available externally on BEC website

Method

The steps followed were:

1. Update of the tools building on:
 - latest data available (weather data from the Met office, common data with Biomass Energy Centre (BEC) for timber calorific value and densities) and
 - feedback received since the initial version of the calculators was published
2. Review of the updated version of the tools (Geoff Hogan – BEC, Duncan Ireland – TD)
3. Adjustments on the basis of the feedback received and production of a final version.
4. Delivery of tools to BEC to be made available online.

Results

The initial version was modified on the basis of the feedback received. It was decided that the boiler sizing calculator would not be further developed, as improvements would have required the development of specific engineering calculations of modules. It was instead decided to support the development of the Carbon Trust Biomass Sizing Tool, more advanced in its development and with a greater focus on the design and engineering aspects of biomass boiler installations.

Conclusions

No conclusions as such can be drawn at this stage.

Recommendations

It is recommended that the level of use and user satisfaction be monitored for future updates of the tool. A link for users' feedback will be provided to this effect on BEC website.

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Operational/working practice

No implications.

Cost/output

No implications.

Health and Safety

No implications.

Country policy

No implications.

Existing FC publications

Links have been made to relevant guidance already available from BEC website.

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TD Reference

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Appendices

Electronic appendices:

Appendix 1: Woodfuel calculators – V2 August 2010