

# Methodology Note: Survey of UK Pellet and Briquette Production

## Introduction

The Survey of UK Pellet & Briquette Production, or pellet survey, is an annual survey conducted by the Forestry Commission (FC) to collect data from wood pellet and briquette manufacturers in the UK, in order to monitor trends in wood use and renewable energy. Results from the survey are published in statistical releases produced by the Forestry Commission and are used by a range of others.

The pellet survey was reviewed in detail in 2014. The review report is available at [www.forestry.gov.uk/pdf/srpelletsurvey.pdf/\\$FILE/srpelletsurvey.pdf](http://www.forestry.gov.uk/pdf/srpelletsurvey.pdf/$FILE/srpelletsurvey.pdf). The review identified a need to document:

- the methods and processes involved in data collection; and
- the editing and imputation performed on the survey data.

This methodology note provides the documentation, and complements the information already available on the pellet survey, including questionnaires and quality report, at: [www.forestry.gov.uk/forestry/inf-d-94ukb2](http://www.forestry.gov.uk/forestry/inf-d-94ukb2).

Information on how the results of the pellet survey are used in outputs can be found in the *Methodology Note: UK Wood Production* at [www.forestry.gov.uk/pdf/mnukwp.pdf/\\$FILE/mnukwp.pdf](http://www.forestry.gov.uk/pdf/mnukwp.pdf/$FILE/mnukwp.pdf).

## Data collection

### Design

The pellet survey questionnaires are designed by in-house experts (FC statisticians). They are reviewed annually by in-house and external experts in the subject area, the Expert Group on Timber and Trade Statistics (EGTTS, [www.forestry.gov.uk/forestry/inf-d-5rabj3](http://www.forestry.gov.uk/forestry/inf-d-5rabj3)). The EGTTS is consulted on proposed changes and all members can suggest changes.

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An on-going dialogue between the FC statisticians and the EGTTs via three meetings per year ensures that the data collection procedures remain appropriate from the users' standpoint.

As this is a survey of businesses, the questionnaire is available in English only.

The survey is voluntary, and FC statisticians endeavour to make it easier for respondents to supply data by:

- only asking questions that are strictly necessary;
- offering a choice of collection modes (see below);
- stating that estimates are acceptable;
- providing the name and contact details of a survey liaison point; and
- being willing to negotiate a time extension for return of questionnaires.

Details of the questionnaires used, including the justification for every question asked, can be found at:

[www.forestry.gov.uk/pdf/pelletsurveyq.pdf/\\$FILE/pelletsurveyq.pdf](http://www.forestry.gov.uk/pdf/pelletsurveyq.pdf/$FILE/pelletsurveyq.pdf).

The pellet survey is thought to cover nearly all operating businesses and can be considered as a census.

### Modes

Data from the pellet survey are collected through paper and e-mail (via Microsoft Excel). Recipients can complete either paper or Excel questionnaires, as is most convenient to them, which contributes to improved response rate and quality.

Although the responses to paper questionnaires need to be manually entered into the system, the process is still manageable given the number of responses (~ 10), and includes manual quality assurance checks which also need to be performed for Excel data. E-mail collection remains the preferred mode from the FC's perspective, in terms of ease of collection, cost and minimisation of errors.

The survey timetable is set to allow for unexpected delays. The recipients are given several months to complete the surveys, so there is minimal risk that a major disruption would affect response rates.

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## Response

Historical response rates for the pellet survey are provided in the Sources section of *Forestry Statistics*:

[www.forestry.gov.uk/forestry/inf-d-7a9dgc](http://www.forestry.gov.uk/forestry/inf-d-7a9dgc).

More detailed response rates for the latest year are available in the pellet survey quality report at: [www.forestry.gov.uk/pdf/ukpelletqrpt.pdf/\\$FILE/ukpelletqrpt.pdf](http://www.forestry.gov.uk/pdf/ukpelletqrpt.pdf/$FILE/ukpelletqrpt.pdf).

Please note that in the Sources section of *Forestry Statistics*, nil returns are counted as a response. In the pellet survey quality report, nil returns are excluded, following the approach used by the Office for National Statistics.

Response bias is mostly linked to business size rather than survey mode, with lower response rates for small businesses. It is likely that some of the small businesses on the survey distribution list do not currently produce pellets, explaining the relatively low overall response rate.

Weighted response rates are calculated to provide an estimate of the proportion of the total UK pellet and briquette production that is accounted for by respondents.

## Data transfer

Individual Excel returns are copied to a master input spreadsheet, before being transferred to SAS, a statistical software package ([www.sas.com](http://www.sas.com)). Paper returns are entered manually into the master input spreadsheet.

The quality of data transfer is assured by:

- checking that the number of responses received equals the number processed;
- checking for the presence of key respondents;
- when potential errors are flagged during data processing, checking them against the original individual returns; and
- checking of manual data entry and of electronic transfer from Excel to SAS.

### Editing and imputation

Data processing and analysis takes place in SAS and Excel. The processing steps are documented as comments within the SAS code and in the Excel spreadsheets.

Data from the latest year is merged with historical data, and the outputs of interest are calculated and exported to Excel.

A number of quality assurance checks, corrections and imputations are carried out at several stages of the data processing and analysis. For large suspected errors or missing data, and for large businesses, the data providers are contacted where possible and asked to check their submission. Failing this, or for minor discrepancies, manual amendments or imputations to record level data are made by the statistics team, mainly based on historical data. Small businesses are not re-contacted in order to limit the burden on data providers. The survey is relatively small, which makes data editing and imputation practical at record-level.

Data entry errors are corrected in the master input spreadsheet. All other manual corrections are coded within the SAS programs, in order to provide an audit trail.

### Editing

Quality assurance checks and associated editing include:

- completeness (missing, duplicate or incomplete records): check against register for large missing respondents, deletion of duplicate records, check against original return for incomplete records;
- consistency within categories (such as breakdowns not adding up): conversion to percentages when quantities have been entered instead of percentages, completion of incomplete breakdowns;
- consistency between categories (such as consumption and production): flagging up of unrealistic recovery rates for follow-up;
- consistency with historical data (large year-on-year increases/decreases);
- comparison with other data sources; and
- comparison with returns from other respondents.

The wording of the questionnaire has been refined in order to reduce the likelihood of respondent errors occurring.

Some known common errors are automatically edited, such as percentage breakdowns not adding up. The remaining errors are edited manually.

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The amount of editing carried out is monitored and reported in the pellet survey quality report. The editing rate for key items has been 0% for the last three years.

## Imputation

Missing values or records are imputed, mainly based on historical data.

When current year data are unavailable and no other information is known, previous year data are rolled forward.

Jeremy Darot / Sheila Ward  
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### Glossary

**Briquettes** Similar to wood pellets (see below) but larger, briquettes are made from compressed wood fibres and used for heating.

**Forestry Commission (FC)** The government department responsible for forestry matters in England, Scotland and (until March 2013) Wales. The Forestry Commission's functions in Wales transferred to a new organisation, Natural Resources Wales, on 1 April 2013. The responsibility for forestry is devolved.

**Great Britain (GB)** England, Wales and Scotland.

**United Kingdom (UK)** Great Britain and Northern Ireland.

**Wood pellets** Sawdust or wood shavings compressed into uniform diameter pellets to be burned for heat or energy.