

Non-Domestic Renewable Heat Incentive (ND-RHI) Fuel Measurement and Sampling (FMS) Questionnaire (v.3)

**All Solid Biomass and Non-Anaerobic Digestion (AD) Biogas**

**This FMS questionnaire applies to the following technology types:**

* Solid Biomass (heat only)
* Solid Biomass Combined Heat and Power (CHP)
* Biogas produced from Gasification or Pyrolysis
* Solid Biomass contained in waste

The Fuel Measurement and Sampling (FMS) questionnaire seeks to establish the procedures an RHI applicant or participant will undertake to determine the renewable proportion of fuels eligible for RHI support and fulfil the sustainability reporting requirements of the Non-Domestic RHI scheme. It also seeks to establish the procedures relating to ancillary fossil fuel use. Prior to completing this document, please ensure you have read the [RHI Sustainability Self-Reporting Guidance](https://www.ofgem.gov.uk/publications-and-updates/non-domestic-rhi-main-guidance) and the [Guidance: Fuel Measurement and Sampling (FMS)](https://www.ofgem.gov.uk/publications-and-updates/non-domestic-rhi-main-guidance).

**Please complete all relevant sections of the FMS Questionnaire.**

**Please note:** The submission and approval of the FMS questionnaire forms part of the RHI accreditation process for installations required to undertake FMS procedures. Your FMS can be uploaded to the RHI Register or submitted to [rhi.biomass-sustainability@ofgem.gov.uk](mailto:rhi.biomass-sustainability@ofgem.gov.uk) stating the RHI number. Accreditation cannot be granted unless FMS procedures have been submitted and approved. Once accredited, you must continue to adhere to the procedures described in your FMS questionnaire throughout your participation on the RHI scheme.

**Making Changes to your FMS:**

It is part of your ongoing obligations to ensure your FMS is up to date and correct.  Any changes to your FMS procedures need to be reviewed and approved before continuing with periodic data submissions. Any changes to the consignments or practises used must be reflected in your FMS.  An amended FMS **must** be submitted via e-mail to [rhi.biomass-sustainability@ofgem.gov.uk](mailto:rhi.biomass-sustainability@ofgem.gov.uk)

If you have any questions, please e-mail [rhi.biomass-sustainability@ofgem.gov.uk](mailto:rhi.biomass-sustainability@ofgem.gov.uk) or call our enquiry line on 0300 003 2289.

# Contents:

**Declaration** Page 3

**Section A:** Installation Information Page 3

**Section B:** Fuel Consignments Page 4

**Section C:** Weighing Procedures Page 7

**Section D:** Ancillary Fossil Fuel Use Page 13

**Section E:** Contamination of Fuels and Biomass Contained

in Waste Page 16

**Section F:** Green House Gas Emissions Page 19

**Section G:** Land CriteriaPage 22

**Section H:** Woodfuel Quality Criteria Page 23

**Additional Information:** Page 24

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| Sustainability reporting requirements | Participants who chose or are required to self-report must report on the sustainability information of the fuel(s) they use in their accredited installation from 5 October 2015. This sustainability information must be provided on a consignment basis.  In order to provide this information participants must:   * Classify and allocate their fuels into consignments. * Implement a method for tracking the sustainability information of consignments of fuel that are mixed and measuring the amount of each consignment used. * Keep accurate records of the consignments of fuel used in their accredited installation. |
| Questionnaire completion | When completing this questionnaire, please ensure you clearly outline how you will undertake your procedures. If required, there is extra space at the end of this questionnaire for your answers or any other information you think is relevant.  When referencing industry standards please include the name, issuing body and reference number of the standard(s). |
| FMS  questionnairesubmission | Your completed FMS questionnaire will need to be submitted alongside your completed RHI application. Your FMS questionnaire must be in Portable Document Format (PDF) in order to upload it to the RHI Register. Any additional evidence (e.g. lab reports, GHG calculations, etc.) should be submitted via e-mail to [rhi.biomass-sustainability@ofgem.gov.uk](mailto:rhi.biomass-sustainability@ofgem.gov.uk) stating your RHI number. |

**Declaration**

I can confirm that all the information provided in this document is correct, to the best of my knowledge and belief. I am aware that I need to notify Ofgem where any of the procedures detailed in this document, feedstock(s) and/or fuel(s) change.

**Please note this document must be signed by the authorised signatory of the installation. If it is not signed by the authorised signatory, it will be returned, which could delay the review and approval of this document and RHI application for accreditation.**

Signed by Authorised Signatory *(This can be electronically signed or typed):*

**Section A:**

Installation information

This section gathers general information regarding your installation. The answers must match those stated on your accreditation application.

1. RHI number:
2. Name of installation: *(This name must match the name provided in HA100 of your RHI application)*

1. Technology of installation:
2. Capacity of installation in kWth:
3. Does your installation produce heat only or heat and power?

Heat only

Heat and power

**Section B**

Fuel Consignments

This section serves to list the fuel consignments used in your installation and determine their classification.

1. Please list **all** your consignments of fuel in the table below[[1]](#footnote-1), including those listed on the BSL or SFR. Please refer to Chapter 4 of the [Sustainability Self-Reporting Guidance](http://www.ofgem.gov.uk/ndrhi-guidance) for more information on fuel classifications and consignments.

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| **Unique Name** | **Source and country of origin** | **Fuel Classification** | **Fuel State**  **e.g. bales, chip** | **Sourced from Authorised Scheme e.g. BSL, SFR?** | **If authorised fuel, please add number** |
| *e.g. MDF Wood Chips* | *e.g. Local factory, UK* | *e.g. Waste* | *e.g. Chip* | *e.g. No* | *N/A* |
| *e.g. Woodchip* | *e.g. Local supplier, UK* | *e.g. Product* | *e.g. Chip* | *e.g. Yes* | *BSLXXXXXXX-XXXX* |
| *e.g. Wheat Straw* | *e.g. Local farm, UK* | *e.g. Agricultural Residue* | *e.g. Bales* | *e.g. No* | *N/A* |
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1. Please provide as much detail of each consignment classified as ‘residue’ or ‘waste’, including reasons behind the classification.

If you can identify your consignments in Appendix 2 of the [Sustainability Self-Reporting Guidance](http://www.ofgem.gov.uk/ndrhi-guidance), please provide this information in the box below. If your consignment is not listed in Appendix 2 and you have stated it is a waste or a residue, Ofgem will request further information to determine the classification of a particular consignment.

For further guidance on fuel classification, you may wish to refer to the [Renewables Obligation (RO) Fuel Classification Flow Diagram](https://www.ofgem.gov.uk/publications-and-updates/renewables-obligation-fuel-classification-flow-diagram).

1. If wood pellets are used at the installation, do they contain binders?

Yes [go to question B.4]

No [go to section C]

N/A [go to section C]

1. Is the binder below or equal to 2% by weight of the wood pellets used at the installation?

Yes  No

Please note that if binders contribute >2% of the wood pellets’ weight then the sustainability criteria of the binder will need to be reported on a consignment basis.

**Section C**

Weighing Procedures

This section assesses the procedures used to quantify the fuel used per consignment in a quarter.

1. Are any of your consignments mixed prior to entering the combustion/gasification chamber?

Yes [go to question C.6]

No [go to question C.2]

Unmixed Consignments

1. How is the quantity of each consignment used each quarter determined? This should be determined by weight. Should the fuel be stored prior to use (i.e., carried over), please describe how the weight of each fuel **used** **in a given quarter** is determined.

Please refer to the locations at which measurements are taken and any equipment that is used (e.g., on entry to site, using a weigh bridge etc).

Please confirm how the fuel(s) will be stored on site? In particular, comment on any steps taken to ensure fuels are protected from the elements and average residence time in storage prior to combustion.

1. Please state the accuracy of any equipment and methodologies used as a percentage (± X%)?
2. How is the accuracy of the equipment or methodology maintained? This should include relevant standards of calibration of the measuring equipment and frequency of calibration.
3. Please outline the fuel records you will retain to evidence the quantity of each consignment used each quarter. Please refer to our [guide to keeping fuel records for biomass](https://www.ofgem.gov.uk/publications-and-updates/renewable-heat-incentive-guide-keeping-fuel-records-biomass-1https:/www.ofgem.gov.uk/publications-and-updates/renewable-heat-incentive-guide-keeping-fuel-records-biomass-1).

Your answer should include a description of the information you will be recording and how you will store this information (e.g., fuel receipts, stock takes etc.).

**Please note you are required to keep fuel records as part of your ongoing obligations under the Non-Domestic RHI Scheme.**

Mixed Consignments

For consignments that are mixed prior to entering the combustion/gasification chamber, we recommend using a mass balance system to determine the proportions of consignments used per quarter. Please refer to Chapter 7 of the [Sustainability Self-Reporting Guidance](http://www.ofgem.gov.uk/ndrhi-guidance) before completing this section.

1. Please state which of your consignments are mixed. Including whether the mixing takes place at your installation or prior to arriving.
2. How is the quantity of each consignment used each quarter determined? This should be determined by weight. Should the fuel be stored prior to use, please describe how the weight of each fuel **used** **in a given quarter** is determined.

1. Please refer to the locations at which measurements are taken and any equipment that is used (e.g. on entry to site, using a weighbridge etc.).
2. Please explain how you will use a mass-balance system, including:
   * Whether you are using a proportionate or non-proportionate mass balance system. Please note that if any of your consignments have fossil fuel contamination a proportional mass balance approach must be used.
   * Where in the supply chain and/or installation the method will be used.
   * To which fuel consignments it will apply.
   * How you will use the system to determine the quantity of each fuel consignment used in each quarter.
3. Please state the accuracy of any equipment and methodologies used as a percentage (± X%).
4. How is the accuracy of the equipment or methodology maintained? This should include relevant standards of calibration of the measuring equipment and frequency of calibration.
5. Please outline the fuel records you will retain to evidence the quantity of each consignment used each quarter. Please refer to our [guide to keeping fuel records for participants using 100% biomass fuel.](https://www.ofgem.gov.uk/publications-and-updates/renewable-heat-incentive-guide-keeping-fuel-records-biomass-1)

Your answer should include a description of the information you will be recording and how you will store this information (e.g., fuel receipts, stock takes, mass balance spreadsheet etc.).

**Please note you are required to keep fuel records as part of your ongoing obligations under the Non-Domestic RHI.**

**Section D**

Ancillary Fossil Fuel Uses

Under the definition in Regulation 2 of the RHI regulations 2018 (as amended), Energy Content is the energy contained within a substance expressed in terms of the substances gross calorific value (GCV).

1. Are you using fossil fuels at your installation for permitted ancillary purposes?

Yes [go to question D.2]

No [go to section E]

1. What type of fossil fuel is used at the installation for ancillary purposes?
2. What is the purpose of fossil fuel use?

The heating of the accredited RHI installation's combustion system to its

normal operating temperature or the maintenance of that temperature

Cleansing other fuels from the accredited RHI installation's combustion system prior to using fossil fuel to heat the combustion system to its normal

temperature

The ignition of fuels of low or variable calorific value

Emission control

In relation to accredited RHI installations which are CHP systems, standby

generation or the testing of standby generation capacity

1. Please tick the box below to confirm you are aware that the RHI regulations mandate that the energy content of the fossil fuel used during any quarterly period for permitted ancillary purposes must not exceed 10 per cent of the energy content of all the fuel used to generate heat during that quarterly period.

1. Does the ancillary fuel result in heat generation?

Yes [go to question D.6]

No [go to section E]

To determine the installations’ eligible heat output, the quantity, and Gross Calorific Value (GCV) of fossil fuel(s) used each quarter must be known. This section establishes the procedures used to measure the quantity and sample the GCV of fossil fuel used to generate heat.

1. How will you determine the quantity and gross calorific value (GCV) of any fossil fuel used and how will you evidence these figures quarterly?
2. If any fuel is carried over from one quarter to the next, how will this quantity be accounted for?
3. Please state the accuracy of any equipment and methodologies used as a percentage (± X%).
4. How is the accuracy of the equipment or methodology maintained? This should include relevant standards of calibration of the measuring equipment and frequency of calibration.
5. Please send your proposed fossil fuel qualifying percentage calculation spreadsheet to [rhi.biomass-sustainability@ofgem.gov.uk](mailto:rhi.biomass-sustainability@ofgem.gov.uk). Please include the RHI number of your installation in the subject title. The calculation should clearly show the methodology, formulas, and units.

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| **Section E**  Contamination of Fuels and Biomass Contained in Waste |

The use of biomass with fossil fuel derived contamination is permitted under the RHI regulations. However, this contamination must not exceed 10% of the energy content of the biomass (contaminated or otherwise) used in an installation over a quarter.

Evidence of the contamination is required for all fuels as the voluntary schemes (BSL or SFR) do not assess fossil fuel contamination. Examples of contaminants include paints, resins, and plastic particles.

Contamination information is required for all consignments listed in Section B of this FMS.

Installations using Biomass Contained in Waste, the proportion of solid biomass contained in the waste must be a minimum of 10%. Please complete Section E.3 onwards.

The evidence required depends on the percentage contamination, classification of the contaminated fuel, size and technology of the installation. There are three options available:

1. **Self-declaration**

If the fuel used is 100% biomass (0% contamination), not derived from waste wood and your installation capacity is smaller than 1MWth you may submit a self-declaration in the text box below.

*[The statement should confirm the* ***‘relevant consignment is 100 per-cent biomass and is free from fossil fuel and fossil derived contamination’****]*

1. **Supplier declaration**

All installations using waste wood and installations with a capacity greater than, or equal to, 1MWth using fuels (of all classification) are required to provide a declaration letter for consignments that are 100% biomass.

The supplier’s declaration should be provided by each of the installations fuel suppliers. The letter can cover multiple fuels provided they are sourced from the same supplier. This should be signed by the supplier and not by the applicant and should be on the suppliers headed paper.

**NB:** If waste wood is being self-supplied (i.e., from the installations own business process) you need to be sure there is no contamination present, we therefore suggest a laboratory report is provided to confirm this. It is not unexpected for waste wood to have some level of contamination, depending on the previous processes. If a laboratory report is not provided for the waste wood a detailed explanation of the processes prior to the consignment being used as a fuel is required to illustrate the reasons behind the fuel being 100% contamination free.

1. **Laboratory Report**

Consignments that are biomass containing contamination are required to provide a laboratory report providing evidence of the percentage contamination present.

The lab report(s) should be obtained from an UKAS accredited laboratory and should show the percentage of biogenic content of the fuel, the type of test applied (e.g., Selective Dissolution Method, Manual Sort) and the standard(s) (e.g., ISO or equivalent) the testing was performed to.

A laboratory report can also show the fuel is 100% biomass. In this case, a supplier declaration is not required.

1. Please state which consignments listed in section B are contaminated, or the type of waste used in your installation.
2. Please state how a representative sample is collected for analysis

* Location that the sample is collected, making reference to any apparatus used.
* The weight of sample extracted (in kg)
* The standards to which the sample is collected

1. If composite samples are created from the sample collected as described above are collected. Describing:

* The number and weight of composites created.
* The standards in line with which they are created.

1. Please state what information will be collected quarterly and made available to Ofgem on request.
2. Please send your proposed fossil fuel qualifying percentage calculation spreadsheet to [rhi.biomass-sustainability@ofgem.gov.uk](mailto:rhi.biomass-sustainability@ofgem.gov.uk). Please include the RHI number of your installation in the subject title. The calculation should clearly show the methodology, formulas, and units.

1. **Additional sources of contamination**

Other than any fossil derived energy content in the fuel itself, have any other sources of potential contamination been identified (e.g., shared storage or delivery vessels between fossil derived materials and biomass fuels)?

Yes [go to question E.10]

No [go to section F]

1. If you have answered ‘Yes’ to question E.9, how will you manage these to limit potential contamination of the fuels?

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| **Section F**  Greenhouse Gas (GHG) Emissions |

If all consignments listed in Section B are classified as wastes, you do not need to complete this section.

Please refer to Chapter 5 of the [Sustainability Self-Reporting Guidance](http://www.ofgem.gov.uk/ndrhi-guidance) before completing this section. Consignments classed as products or residues are required to report Greenhouse gas emissions quarterly.

1. Please confirm which methodology you are using to calculate the GHG emissions. Please note, those stations over 1MWth are required to calculate the GHG values using the Actual Value method.

Default Value method [go to question F.2]

Actual Value method [go to question F.3]

Both Default and Actual Value method [complete both F.2 and F.3]

1. **Default Value Method Only:** Please complete the table below including all consignments classified as products or residues in Section B. Please note, those stations over 1MWth are required to calculate the GHG values using the Actual Value method.

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| **Consignment Name (using default E-values)** | **Default E-value (gCO2 eq/MJ)** |
| *e.g., Wheat Straw* | *e.g., 2* |
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1. If any GHG values are calculated using the actual value method please describe how they were obtained (e.g., a B2C2 fuel chain, other GHG calculation methodology).
2. Please send your proposed GHG calculation spreadsheet to [rhi.biomass-sustainability@ofgem.gov.uk](mailto:rhi.biomass-sustainability@ofgem.gov.uk). Please include the RHI number of your installation in the subject title. The calculation should clearly show the methodology, formulas, and units. The calculation should include:

* NCV values provided below (as per the definition of energy content)
* Calculation of GHG values using Actual Value method, or the relevant E-Values (where applicable)
* Quarterly Meter Readings (Heat and/or Electrical)
* Quarterly Weight of Fuel(s) used

If quarterly periodic data is not available, please clearly show where the data would be input to the spreadsheet.

**N.B.** The efficiency must be calculated quarterly using actual inputs (fuel records & NCVs) and outputs (meter readings). **Nameplate efficiencies are not permitted**.

1. Please provide the net calorific value (NCV) of each consignment (listed in Section B) and the source in the table below. These values can be sourced from:

* [Sustainability Self-Reporting Guidance](https://www.ofgem.gov.uk/publications-and-updates/non-domestic-rhi-main-guidance)
* Literature values (e.g., DUKES database)
* Evidence of direct measurement and sampling (e.g., laboratory report)

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| **Consignment name** | **Net Calorific Value (NCV)** | **Units of NCV** | **Source of data (e.g., RHI guidance, lab report, literature values etc.)** |
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1. If you have sourced the values from lab testing, the lab report(s) should be obtained from an UKAS accredited laboratory and should confirm the NCV figure, the type of test applied (e.g., Selective Dissolution Method, Manual Sort) and the standard(s) (e.g., ISO or equivalent) the testing was performed to.

**Section G**

Land Criteria

If all consignments listed in Section B are classified as wastes, you do not need to complete this section.

Please refer to Chapter 6 of the [Sustainability Self-Reporting Guidance](http://www.ofgem.gov.uk/ndrhi-guidance) before completing this section. The requirement to report against the Land Criteria is dependent upon the fuel classification of the fuel consignment(s).

1. Please confirm which methodology you are using to demonstrate compliance with the land criteria. Please note for woody biomass either Category A or Category B evidence must be used to demonstrate compliance with the land criteria.

Category A Evidence (Certificate scheme e.g., FSC, PEFC)

Category B Evidence (Bespoke evidence e.g., risk-based regional approach)

Other Evidence (voluntary schemes, aerial photos, satellite images, maps,

land use records etc.)

Combination of above methodologies

1. Please complete the table below including all consignments which will be required to demonstrate compliance with the land criteria. For each consignment, please state what evidence you will use to demonstrate compliance.

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| **Consignment Name (fuel classification)** | **Land Criteria compliance method** |
| *e.g., Wheat Straw (Agricultural Residue)* | *e.g., Other Evidence (Satellite images, maps and land use records)* |
| *e.g., Wood logs (Product)* | *e.g., Category A (FSC certificates)* |
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**Section H**

Woodfuel Quality Criteria

If all consignments listed in Section B are classified as wastes, you do not need to complete this section.

Please refer to Chapter 2 (point 2.27) of the [Sustainability Self-Reporting Guidance](http://www.ofgem.gov.uk/ndrhi-guidance) before completing this section.

All accredited RHI installations using solid biomass which is wood to generate heat must meet the woodfuel quality criteria. All fuels must meet the relevant standards and be certified by the Woodsure Certification Scheme or equivalent. Please note, participants using solid biomass which is waste or is wholly derived from waste will not be required to meet the woodfuel quality criteria.

1. Please confirm what evidence will be provided to demonstrate the woody biomass used by the installation meets the Woodfuel Quality Criteria

Sourcing all Woody Biomass from BSL-listed suppliers

Obtaining copies of Woodsure certificates from fuel supplier(s)

Installation obtaining Woodsure certificate(s) for fuel use from Woodsure

Combination of above methodologies

1. Please complete the table below indicating how each woody biomass consignment will meet the Woodfuel Quality Criteria.

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| **Consignment Name (Source)** | **Woodfuel quality criteria evidence** |
| *e.g., Wood chips (Local Supplier)* | *e.g., Woodsure certificate provided by [supplier name]* |
| *e.g., Wood logs (Own land)* | *e.g., Woodsure certificate obtained from Woodsure directly* |
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**Additional information**

Please use the space below if you need to add additional information to any of the questions in this document.

1. If you require more space please use an additional sheet [↑](#footnote-ref-1)