

Non-domestic Renewable Heat Incentive (RHI) Fuel Measurement and Sampling (FMS) questionnaire

**Producers of Biomethane**

The Fuel Measurement and Sampling (FMS) questionnaire seeks to establish the procedures an RHI applicant or participant will undertake to determine eligible biomethane and fulfil the sustainability reporting requirements of the RHI scheme. Prior to completing this document, please ensure you have read the [RHI Self-Reporting Guidance](https://www.ofgem.gov.uk/publications-and-updates/non-domestic-rhi-main-guidance) and the [RHI Fuel Measurement and Sampling (FMS) Guidance](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 and 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.

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| Sustainability reporting requirements | The RHI Scheme regulations require registered biomethane producers to report on the sustainability information of the feedstock they use to produce biomethane. This sustainability information must be provided on a feedstock consignment basis.  In order to provide this information participants must:   * Classify and allocate their feedstock into consignments * Implement a method for tracking the sustainability information of feedstock consignments that are mixed and measuring the amount of each consignment used. * Keep accurate records of the feedstock consignments used to produce biomethane |
| 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 that/those 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 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. |

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| **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 and/or the feedstocks change.

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

Signed by Authorised Signatory:

**Section A:**

Installation information

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

1. RHI number:
2. Name of installation: *(This name must match the name provided in HA100 of your RHI application)*
3. Maximum Initial Capacity (if your application is for additional biomethane, please provide Maximum Additional Capacity)

**Section B**

Feedstock Consignments

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

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

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| --- | --- | --- | --- | --- |
| **Consignment Name** | **Source and country of origin** | **Feedstock Classification** | **Feedstock description** | **Feedstock State e.g. Solid, Liquid[[2]](#footnote-2)** |
| *e.g. Miscanthus* | *e.g. UK, own farm* | *e.g. Product* | *e.g. UK, own farm* | *e.g. Solid* |
| *e.g Straw* | *e.g. UK, local farm* | *e.g. Agricultural Residue* | *e.g straw bales from local farm* | *e.g. Solid* |
| *e.g. Animal Slurry* | *e.g. Own Farm, UK* | *e.g. Waste* | *e.g. Animal Excreta* | *e.g. Liquid* |
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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 type of 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)

**Section C**

Assessing consignments

This section assesses the procedures used to quantify the feedstock consignments used in a quarter.

1. Are any of the feedstock consignments mixed prior to entering the digester?

Yes [go to question C.6]

No [go to question C.2]

Unmixed Consignments

1. How is the quantity of each feedstock consignment fed to the digester each quarter determined? This should be determined by weight or volume. Should the feedstock consignment be stored prior to use (i.e., carried over), please describe how the weight of each feedstock consignment **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 weighbridge etc.).

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 feedstock records you will retain to evidence the quantity of each consignment used each quarter. 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.**

**If all of your consignments are unmixed and you have completed questions C2 to C5, please proceed to section D.**

Mixed Consignments

For feedstock consignments that are mixed prior to entering the digester, 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 feedstock consignments are mixed. Including whether the mixing takes place at your installation or prior to arriving.
2. How will you determine the quantity of each feedstock consignment used in a quarter? Please note quantity should be determined by weight or volume. If feedstock consignments are stored prior to use, please describe how the quantity of each feedstock consignment **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 weighbridge etc.).

1. Please explain how you will use a mass-balance system, including:
   * Whether you are using a proportionate or non-proportionate mass balance system.
   * Where in the supply chain and/or installation the method will be used.
   * To which feedstock consignments it will apply.
   * How you will use the system to determine the quantity of each feedstock consignment used in each quarter.
2. Please state the accuracy of any equipment and methodologies used as a percentage (± X%).
3. 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.
4. Please outline the feedstock records you will retain to evidence the quantity of each consignment used each quarter.

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 feedstock records as part of your ongoing obligations under the Non-Domestic RHI Scheme.**

**Section D**

Apportioning biogas yields to feedstocks

**Installations with only one feedstock consignment in Section B do not need to complete this section and should go to Section E.**

If you are using more than one consignment, our Non-Domestic [RHI and FIT Biogas Apportioning Tool](https://www.ofgem.gov.uk/publications-and-updates/non-domestic-rhi-and-fit-biogas-and-biomethane-apportioning-tool) (BAT) will allow you to apportion the quantity of biogas produced by each feedstock consignment in a quarter.

1. Please complete the table below for all consignments listed in Section B1[[3]](#footnote-3).

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| --- | --- | --- | --- |
| **Consignment name** | **Moisture content (%)** | **Methane Yield per Tonne Volatile Solid (m3CH4/TVS)** | **Source of values (e.g., RHI guidance, lab reports etc.)** |
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1. How will the biogas produced be apportioned to each feedstock used?

Using the Ofgem RHI Biogas Apportioning Tool [go to Section E]

Other Biogas Apportioning Tool methodology [go to question D.3]

1. Please describe in detail, the methodology selected in question **D.2**, to apportion the biogas yields to the feedstock consignments. Please state the calculation and any values used, not given in table **D.1**. This can be provided in an additional document e.g., spreadsheet.

**Section E**

Greenhouse Gas (GHG) Emissions

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. Biomethane producers **must** calculate the GHG values of the fuels using the Actual Value method. Please confirm that you are using this methodology to calculate the GHG emissions for your biomethane:

Yes, the Actual Value method is used to calculate the GHG emissions of the

biomethane.

1. Biomethane producers are required to calculate the GHG emissions based on the net calorific value (NCV) of the biomethane injected (also known as Lower Heating Value (LHV)). How do you intend to calculate the NCV:

The installation intends to measure the NCV

The installation intends to convert the Gross Calorific Value (GCV) (also

known as Higher Heating Value (HHV)) to NCV.

1. Please provide further details of how the installation intends to convert from GCV to NCV, or how the installation will measure this value
2. The GHG value must be calculated using the actual value method. How you will calculate your GHG value:

B2C2 Calculator

Other GHG Calculation methodology (e.g., Ricardo tool, own tool etc).

**Please send your proposed GHG calculation methodology to** [rhi.biomass-sustainability@ofgem.gov.uk](mailto:rhi.biomass-sustainability@ofgem.gov.uk)

**Section F**

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 G**

Measuring the energy content of biomethane injected

1. Please describe how you will measure the volume and gross calorific value (GCV) of your biomethane:
2. Is any method of verification of your measurements used? If so, please outline this method below:
3. Please complete the table directly below regarding your meters:

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| **Type of meter**  **(Make, model, volume/mass)** | **Opening meter reading** | **Date meter reading taken**  **(dd/mm/yyyy)** | **Serial number** |
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1. Is any method of verification of the measurements listed in **G.3** used? If so, please provide details of such methods. If you are using a volume flow meter, please provide details of how you will provide readings at standard temperature and pressure.

**Section H**

Measuring the energy content of propane

1. Are you adding propane?

Yes [go to question H2]

No [go to section I]

1. How often or over what time-period will the propane be measured?
2. How do you intend to demonstrate the gross calorific value (GCV) of propane?
3. Please complete the table below regarding your meters:

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| --- | --- | --- | --- |
| **Type of meter**  **(Make, model, volume/mass)** | **Opening meter reading** | **Date meter reading taken**  **(dd/mm/yyyy)** | **Serial number** |
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1. Is any method of verification of the measurements listed in **H.4** used? If so, please provide details of such methods. If you are using a volume flow meter, please provide details of how you will provide readings at standard temperature and pressure.

**Section I**

Measuring the heat to be deducted

1. Where heat from an external source is used at the biogas production plant and/or to produce biomethane, please explain how this heat will be measured:
2. Please complete the table below:

|  |  |  |  |
| --- | --- | --- | --- |
| **Opening meter reading (kWth)** | **Date meter reading taken**  **(dd/mm/yyyy)** | **Serial number** | **What is the meter measuring? (e.g., heat to digester etc.)** |
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**Additional information**

Please use the space below if you need to provide additional information to any of the question in this document

1. If you require more space, please use an additional sheet [↑](#footnote-ref-1)
2. Liquid consignments classified as products or residues are not permitted under the RHI Scheme Regulations. [↑](#footnote-ref-2)
3. If you require more space please use an additional sheet [↑](#footnote-ref-3)