

Renewables Obligation (RO)

www.ofgem.gov.uk/ro

How to complete your standard Fuel Measurement and Sampling questionnaire

Introduction

Submitting a fuel measurement and sampling (FMS) questionnaire and getting it approved forms part of the Renewables Obligation (RO) accreditation process for fuelled generating stations. In your questionnaire, you need to explain the procedures used to measure and sample the fuels used to generate your station's gross output. We can't accredit your station unless these FMS procedures are approved.

We can only issue Renewables Obligation Certificates (ROCs) for electricity generated by renewable sources. Your FMS procedures will produce data that will let us work out how much of the fuel used to generate electricity comes from renewables. They will also let you meet sustainability reporting requirements for biomass fuels.

The following guidance will help you better understand the scheme requirements:

- [Renewables Obligation: Fuel Measurement and Sampling](#)
- [Renewables Obligation: Sustainability Criteria](#)
- [Renewables Obligation: Sustainability Reporting](#)
- [Renewables Obligation: Guidance for Generators](#)

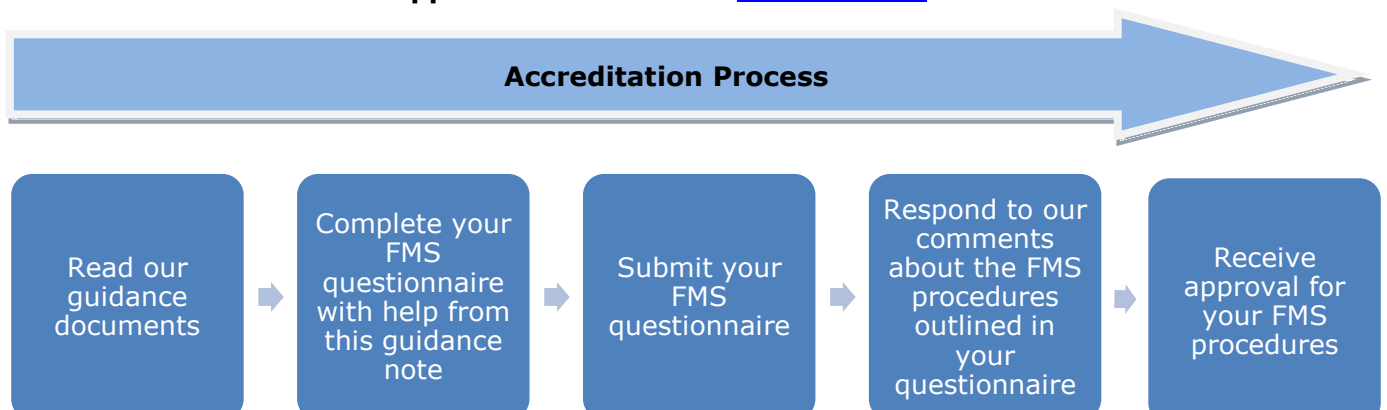
If you have any questions while you're completing your FMS questionnaire, please get in touch on **0207 901 7310** and ask for a member of the Fuelling and Sustainability team.

How will this guidance note help me complete my FMS questionnaire?

Some parts of the questionnaire are simple to answer, but others will need some more consideration. This guidance note tells you what information we need so we can determine whether your procedures meet the scheme requirements.

By reading this note whilst you complete your FMS questionnaire, your submission will be more thorough. This will help reduce the time you spend on the accreditation process.

If you are still considering options for measuring and sampling your fuels, there is further information about this in **appendices 6-10** of the [FMS Guidance](#).



Completing and submitting the questionnaire

When completing the questionnaire, make sure you explain how you will undertake your procedures thoroughly. If your fuels have different states (ie solid/liquid/gas), please complete a separate questionnaire for each fuel state. This helps keep each set of procedures clearly distinguished. The larger the response text box, the more detailed we expect your answer to be. There is extra space for your answers in **Section I** if you need it. You can also submit additional documents, as long as you refer to them clearly in the questionnaire.

Compulsory questions are marked with a 🚩 symbol. Other questions are only relevant to some generating stations. If a question is not relevant, answer N/A.

You should submit your FMS questionnaire and any supporting information with your application on the Register, and also send it to fuellingandsustainability@ofgem.gov.uk. We will get back to you with initial comments about your procedures when we have reviewed your questionnaire.

From this point forward, you can submit updated versions directly to the member of the Fuelling and Sustainability team dealing with your FMS procedures by email. Although the FMS and accreditation reviews run in parallel, these tend to be dealt with by different members of the team.

Which sections of the questionnaire should I complete?

Depending on the size of station and the type of fuel used, you may only need to complete certain sections in accordance with table 1 below:

Station size and fuel type	FMS questionnaire section									
	A	B	C	D	E	F	G	H	I	J
DNC¹ of ≤50kW using solid biomass	✓	✓	✗	✗	✓	✓	✓	✓	✓	✓
DNC of >50kW and a TIC² of <1MW , using solid biomass	✓	✓	✗	✗	✓	✓	✓	✓	✓	✓
Station using renewable waste (fuel with biogenic content <90%)	✓	✓	✗	✗	✓	✓	✓	✓	✓	✓
If none of the above apply eg station using bioliquids or solid biomass with a TIC of ≥1MW	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Table 1 – which sections of the questionnaire should I complete?

¹ Declared net capacity

² Total installed capacity

How to complete your Standard FMS questionnaire

The questions in **Sections A** (Applicant Information), **B** (Version History) and **C** (Fuel Classification) are self-explanatory. Information on how to complete the questionnaire from **Section D** onwards is below:

Section D - Consignment assessment and tracking sustainability information

What does the section do?

The RO Orders require operators of generating stations to report against the sustainability criteria of biomass on a consignment basis. A consignment is a term used in the legislation, which we explain in Chapter 6 of our [Sustainability Criteria Guidance](#). To ensure you report on a consignment basis, **Section D** asks you to:

- Determine whether you are using single or multiple consignments
- Determine whether consignments are mixed

If consignments mix, either offsite or onsite, you will need to work out how much of each consignment is used.

For more information on how to determine the consignments used at your station and mass balance systems, see Chapter 6 of our [Sustainability Criteria Guidance](#).

Tips for completing the section

If you're not yet familiar with what a consignment of biomass is, then Chapter 6 of our [Sustainability Criteria Guidance](#) will help you to understand. We need you to group your fuels into consignments, by looking at their sustainability characteristics.

This can be a tricky area and it's important to get right as it forms the basis for your FMS procedures. If you need any help with this whilst you're completing your FMS questionnaire, then please get in touch on **0207 901 7310** and ask for a member of the Fuelling and Sustainability team.

When putting together your answers for **Section D**, please keep in mind these other top tips for certain questions:

D2 – To avoid confusion, make sure you clearly show how any biomass fuels specified in **Section A** are grouped into consignments, eg wood shavings and sawdust from UK paper mill = wood processing residue consignment.

D10 – When explaining how you will use a mass-balance system, ensure you have covered the following:

- Where in the supply chain and/or generating station the method will be used
 - For consignments that are mixed in the supply chain, explain what information the supplier can provide to show the proportion of consignments in the mixture, and indicate how this will be presented in the supporting documents (eg spreadsheet or supplier declaration on consignment proportions).
 - For consignments mixed at the generating station, explain exactly where the mixing occurs eg storage silos or tanks, feed hoppers etc.
- Which consignments the mass balance will apply to
 - The explanation should only cover the mixed consignments, and does not need to cover consignments that are physically separate and measured just prior to burn.
- How you will use the system to determine the quantity of each consignment used in the month of claim
 - Clearly explain how a proportionate or non-proportionate system is applied to the data produced by your quantity procedures outlined in **Section F**. It is useful if you state any calculations you intend to use as part of your explanation, including the key input values eg (opening stock X percentage consignment A), plus deliveries of consignment A, minus (closing stock X percentage consignment A).
 - Ensure that your answer builds on, rather than duplicates, the information you will provide about the quantity of consignments used in **Section F**.
 - Your supporting information spreadsheet should clearly show the formulae that are used as part of the mass balance system and indicate how input values have been measured.

Section E – Fossil fuel use

What does the section do?

To determine your station's RO eligible renewable output, we need to know the quantity and (Gross Calorific Value) GCV of fossil fuel used each month. We need to know the purpose of the fossil fuel use as this affects the banding at which ROCs are awarded. The section asks about the procedures that you will use to measure the quantity, and sample the GCV, of fossil fuel used to generate electricity.

Tips for completing the section

When putting together your answers for **Section E**, please keep in mind these top tips for certain questions:

E6 – If you need to explain how you will determine the quantity of fossil fuel used to generate electricity in a month, ensure you have covered the following:

- The equipment you use to measure the fossil fuel, including its accuracy (+/-%).
- How you distinguish between fossil fuel that does/does not generate electricity
- If applicable, how you account for any carryover from one month to the next.

E7 - If you need to explain how you will determine the GCV of fossil fuel used to generate electricity in a month, ensure you have covered the following:

- An explanation of the sampling regime or information used (eg supplier invoices) to determine the GCV.
- If there is any carryover in a month, an explanation of how you will account for the energy content of this carryover as part of determining the GCV of the fossil fuel used in the month in question. For example, will you use a weighted or arithmetic average, re-sample the fuel, or simply assume that the GCV of deliveries in a month equates to the fuel's GCV?
- If you get multiple sample results from your sampling regime or supplier, an explanation of how you will determine a single value for the fuel's GCV.

Section F – Determining the quantity of fuels used

What does the section do?

To determine your station's RO eligible renewable output, we need to know the quantity of renewable fuel(s) used each month. The section asks about the procedures that you will use to measure the quantity of renewable fuel(s) used to generate electricity.

Tips for completing the section

When putting together your answers for **Section F**, please keep in mind that:

- The answers in **Section F** should complement, not duplicate, those in D10 regarding your mass balance system.
- The answers should provide a complete explanation of how you determine the quantity of each biomass consignment or any renewable waste burnt in a month. This should clearly distinguish if some consignments are measured differently to others.
- It is critical that you ensure the wording of your answer allows us to understand which consignments or renewable wastes are being measured, by what pieces of equipment and whether they are measured before or after mixing. This allows us to understand how you have derived the input values for your mass balance system.
- Even if you are measuring the quantity of consignments just before burn with a cumulative measuring device, such as a belt-weigher, then you may still need to consider carryover onsite if this information is needed as part of your mass balance system.

Section G – Determining the GCV of fuels used

What does the section do?

To determine your station's RO eligible renewable output, we need to know the GCV of renewable fuel(s) used each month. The section asks about the procedures that you will use to sample the GCV of renewable fuel(s) used to generate electricity.

Tips for completing the section

When putting together your answers for **Section G**, please keep in mind that:

- The answers to this section should provide a complete explanation of how you determine a representative GCV for each biomass consignment or any renewable waste burnt in a month.
- It is critical that you ensure the wording of your answer allows us to understand which consignments or renewable wastes are being sampled, at which locations, and whether any single GCV result is for a mixture of consignments or for individual consignments.
- If you are sampling from a mixture of consignments, you should explain why the GCV of the mixture is representative of the GCV of the individual consignments within that mixture.
- If fuels are carried over from one month to the next, you should outline in G4 how you take this into account to determine a single GCV figure for fuel burnt in the month in question. This could include performing a weighted average calculation, which accounts for both the energy content of opening stock and deliveries.

Section H – Fossil-derived contamination

What does the section do?

To determine your station's RO eligible renewable output, we need to know the fossil-derived energy content of any contaminated or renewable fuel(s) used each month. The section asks about the procedures that you will use to sample for fossil-derived contamination in renewable fuel(s) used to generate electricity.

Tips for completing the section

When putting together your answers for **Section H**, please keep in mind that:

- The answers to this section should provide a complete explanation of how you determine the fossil-derived energy content of any contaminated biomass consignment or renewable waste burnt in a month.
- It is critical that you ensure the wording of your answer allows us to understand which consignments or renewable wastes are being sampled, at which locations, and whether any single contamination result is for a mixture of consignments or for individual consignments.
- If your contamination result is for a mixture of consignments, but you know that only one of the consignments in the mixture is actually contaminated, you should seek to back-calculate the contamination of that specific consignment. This will allow you to report accurate contamination percentage figures against the contaminated and uncontaminated biomass consignments.
- If you carry over fuels from one month to the next, you should outline how you take account of this to determine a single contamination percentage for fuel burnt in the month in question. This could include performing a weighted average calculation, which accounts for both the contamination of the opening stock and deliveries.

Additional documentation

- **Confirmation of 100% uncontaminated biomass** – If a station uses a fuel that is free from fossil-derived contamination, you must confirm in writing that the fuel is 100% biomass. Please see Appendix 2 of the [FMS Guidance](#) for an example of how to provide this evidence.
- **Confirmation of renewable waste** – If a stations use a fuel that meets the definition of Municipal Waste (MW), you must write us a letter confirming that the fuel meets this definition (as set out in our [FMS Guidance](#)). This assures us that appropriate exemptions to reporting against the sustainability criteria are supported by evidence, and that we can issue the correct type of ROC.

Supporting information

Supporting information submitted alongside your FMS questionnaire helps us get a better understanding of your station's FMS procedures. You should include these documents as part of your initial submission. Some examples of supporting documentation relevant to your FMS procedures are:

- A process flow diagram outlining the proposed FMS procedures, paying particular attention to key measurement and sampling locations
- Technical specifications for equipment, eg weighing device specifications
- Procedure/instruction sheet to illustrate how measurement/sampling is done

During the FMS review process, we also agree whether you should submit supporting information each month to help verify the data submitted on the Register. You should put together an example of the supporting information you will submit as part of the initial submission of your FMS procedures. Some examples of this include:

- Laboratory certificates showing the test results from GCV and/or contamination analysis
- Spreadsheets showing any calculations performed to determine the quantity, GCV and contamination of biomass consignments, any renewable wastes and fossil fuels, used to generate electricity at the station. This should include any calculations undertaken as part of the mass balance system.

Checklist

Incomplete or contradictory information in the FMS questionnaire and supporting information can delay the review process. Use the following checklist to ensure the review will proceed smoothly:

Before submitting FMS procedures for review:

- Read the relevant sections of our RO guidance documents
- Decide who will represent the generating station and complete the FMS documents during the review process. Set this individual up as a named user on the Register account
- Read and complete the FMS questionnaire using this guidance document to ensure you have set out the relevant information as thoroughly as possible
- Get in touch with us to discuss any questions

During the review process:

- Ensure all FMS documentation is submitted for review alongside an application for accreditation
- Ensure all comments raised during our review are fully addressed, and the FMS documentation updated accordingly before each re-submission

After FMS approval:

- Read your FMS approval e-mail
- Set-up the relevant fuel(s) on the Register for use in data submissions
- Carry out FMS procedures as per agreement with Ofgem