



Department for  
Business, Energy  
& Industrial Strategy

# Renewable Heat Incentive: biomass combustion in urban areas

Government response to consultation



**OGL**

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# 1. Introduction

The UK is the first major economy in the world to set a legally binding target to achieve net zero greenhouse gas emissions by 2050. We have already made progress towards this goal: emissions from buildings have fallen by 20% between 1990 and 2017. However, to meet our net zero target we will need to go much further. Meeting our net-zero target will require virtually all heat in buildings to be decarbonised and we are committed to supporting this transition.

Through the Renewable Heat Incentive (RHI), we are spending £4.5 billion between 2016 and 2021 to support low carbon heat technologies in homes and businesses, such as heat pumps, biomass boilers and solar water heaters.

In the Clean Air Strategy published in May 2018, the government committed to consult on removing Renewable Heat Incentive Scheme support for new biomass installations in urban areas which are on the gas grid. As a result, in October 2018 the Government published the consultation [Renewable Heat Incentive: Biomass Combustion in Urban Areas](#). This consultation made several proposals on the merits of such a restriction and how it should be implemented. These proposals included removal of RHI support for some or all biomass boilers in urban areas, imposing geographical restrictions on biogas combustion and introducing regular maintenance checks on existing biomass boilers under the RHI.

The consultation closed on 27 November 2018, with 59 responses.

## **This document**

This document sets out the Government's decision on the proposals in relation to the following issues – RHI support for biomass in urban areas, Geographical restrictions on biogas combustion, Maintenance checks for existing biomass boilers.

[Annex A](#) provides the full list of questions asked in the consultation, together with a detailed summary of the responses received.

## 2. Government Response

### Overview of the government response to the consultation

In 2019 the Government set a legally binding target to achieve net zero greenhouse gas emissions from across the UK economy by 2050.

In 2019, Defra's Clean Air Strategy sought to strengthen collaboration between BEIS and Defra on the potential additional environmental impacts of bioenergy. The Government is committed to ensuring that public health impacts from energy emissions are minimised, and that we objectively evaluate impacts and benefits when developing strategies to meet air quality and carbon targets. The measures outlined in this response will allow for the benefits of biomass combustion, particularly in heating large buildings on urban peripheries such as schools and hospitals, to continue to be utilised in the decarbonisation of heating whilst also mitigating the air quality impacts of both existing and new installations.

In response to the results of the consultation we will:

- **Not proceed with the removal of eligibility for new biomass installations** in on-grid urban areas, as this would only prevent the accreditation of a very limited number of new installations. **Instead, improvements to the scheme will focus on the existing cohort of RHI accredited biomass installations and any new biomass installations accrediting to the RHI for the remainder of the scheme.**
- **Not impose any geographical restrictions on biogas production.**
- Ensure that industry standards will play a stronger role in the future of the RHI to minimise air quality impacts and promote a healthy UK biomass supply chain. We will work closely with the biomass industry and Ofgem to **develop an industry standard for boiler maintenance checks** and will implement a standard annual test as an ongoing obligation for all accredited RHI biomass installations.

Additionally, we will further improve the scheme to ensure that:

- We work closely with Ofgem as the Scheme Administrator **to strengthen enforcement of the existing RHI Regulations in relation to air quality** and, if necessary, introduce new powers at the closure of the scheme. This work will take place alongside partners including the Environment Agency, the Forestry Commission, DEFRA and Local Authorities to ensure that, where air quality matters are impacting participant's ongoing obligations under the scheme, Ofgem is fully supported to take enforcement action where necessary.
- We build **a fit for purpose fuel quality regime for biomass feedstocks** for the remainder of the RHI period. We are working in partnership with experts from across the biomass industry, to **design a stronger quality and waste fuel assurance regime for UK biomass fuels**. This will improve the emissions caused by poor quality fuel burned in RHI accredited installations.

## Removal of RHI support for new biomass in urban areas

There were 58 respondents to this section of the consultation, of which the majority (55%) stipulated opposition to the removal of eligibility for biomass in on-grid, urban areas.

Responses to this question additionally noted that more could be done to mitigate the existing air quality impacts of the current 4GW cohort of accredited RHI biomass installations. It was highlighted that focussing on the emissions of existing installations had the potential to deliver far greater public health benefits than targeting the substantially smaller pipeline of urban-based biomass currently anticipated for the remainder of the RHI scheme. As such, the Government will not proceed with the proposed restriction on new biomass plant in on-grid, urban areas but instead focus on the significantly larger existing cohort of RHI biomass.

This approach will deliver a significantly greater reduction in emissions impacting on air quality than the restriction proposed by the consultation. The proposed approach will apply to all installations, rather than simply focussing on new applications, whilst also allowing for the continued contribution of biomass as an important technology in delivering the value for money decarbonisation of heat in important roles such as heating of schools and hospitals.

## Imposing geographical restrictions on biogas combustion

The Government recognises the important role of anaerobic digestion (AD) in the management of urban food waste which, otherwise, may go to landfill. As such, AD and biogas combustion provides for the capture of greenhouse gases that would otherwise be released into the atmosphere.

The Government's recently published Environment Bill required that every household and business in England have a separate collection for food waste so that this can be recycled. We would expect these measures to commence from 2023 and this will significantly increase the amount of separately collected food waste available for AD.<sup>1</sup>

As such, AD will continue to have an important role in capturing upstream carbon savings. Therefore, the Government will not take any further action on proposals to apply geographical restrictions to biogas plants at this time.

## Working towards an industry standard for maintenance checks

Respondents to the consultation were clear that poor maintenance of biomass installations can be a significant contributor to particulate emissions. Respondents unanimously agreed that the introduction of mandatory maintenance checks for biomass boilers would be a forward step in curtailing emissions from installations.

Efficient running of a biomass system can reduce costs to the consumer and have a significant impact on reducing emissions. We will, therefore, work closely with boiler manufacturers, maintainers and the wider biomass industry to develop a standard maintenance check which could become an ongoing obligation for all new and existing biomass installations.

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<sup>1</sup> <https://consult.defra.gov.uk/environmental-quality/consultation-on-consistency-in-household-and-busin/>

We will also carry out further work to establish the practicality of including an emissions test within these requirements as a criterion for boilers of a certain size and above.

RHI regulations already require participants to operate installations in accordance with the manufacturer's instructions in relation to the control of emissions. As such, we will work with the biomass industry to assess the viability of establishing a standard for the operation of biomass boilers which could then be enforced within the powers of the existing RHI regulations.

## Strengthening Enforcement

The RHI has existing emission requirements for particulate matter (PM) and nitrogen oxides (NOx). Participants using biomass are required to provide emissions certificates showing that the plant does not emit more than specified limits in standard testing before they can claim support under the scheme. RHI regulations also stipulate that all fuel must meet strict sustainability requirements and participants must also use the fuel type listed on the emissions certificate of the accredited plant.

As of 1 October 2018, RHI rules placed an obligation on all existing and new applicants to submit relevant permits and exemptions to Ofgem at the point of application and audit as evidence of their compliance with all local and national environmental regulations, including those relating to air quality impacts. For example, the introduction of the Medium Combustion Plant Directive on 20 December 2018 requires all new plant above 1MW in capacity to meet strict environmental permitting conditions for particulate matter and NOx in urban areas.

We are also taking wider action on air quality. In April 2018 a cross-Department RHI Air Quality Working Group was established. This group has worked to better understand the air quality impacts of biomass installations on the RHI and action that can be taken to effectively mitigate these impacts. A key role of this group is to better facilitate data sharing between Ofgem as the Scheme Administrator and regulators responsible for the administration of environmental regulation such as the Environment Agency which is responsible for the newly implemented Medium Combustion Plant Directive. Relevant data sharing agreements continue to be developed between these bodies, allowing the Environment Agency and Ofgem to take quicker action when sites are non-compliant.

We have piloted a joint enforcement approach coordinated between Ofgem as the Scheme Administrator, regulators and the police which has resulted in criminal convictions and in excess of £4million of recouped or avoided RHI payments. We are now exploring approaches to scaling this approach up to a wider enforcement approach.

## Fuel Quality

Fuel quality (for both waste and virgin fuels) can have a significant impact on the emissions of a boiler and the importance of high-quality fuel in curbing particulate emissions was raised by a significant number of respondents.

We are, therefore, working in partnership with the Biomass Supplier List Advisory Panel, which is comprised of experts from across the biomass industry, with a view to designing a stronger quality and waste fuel assurance regime for UK biomass fuels burned in RHI accredited installations.

The government consultation, [The Non-Domestic Renewable Heat Incentive Scheme – Ensuring a Sustainable Scheme](#), launches this month and includes questions on the scope and strength of this new regime with a view to implementing any changes as part of the regulations to reform the RHI scheme in 2021.



# Annex A: Analysis of consultation responses

## Introduction

This annex looks in detail at the responses received to the consultation. It first summarises some information about the respondents to the consultation. It then outlines the questions contained within the consultation and summarises the responses received. The responses have served to inform the Government's decision and policy making process.

## Consultation Respondents

There were a total of 59 responses during the formal period of the consultation (16th October 2018 to 27th November 2018). Respondents comprised of individuals, businesses, trade bodies, local authorities and other organisations.

37 respondents stated an interest in the operation of the RHI scheme across Great Britain. 10 stated a specific interest in England; 5 in both England and Wales; 1 in Wales alone, 2 in Scotland alone and 4 did not specify.

A summary of responses to each of the questions in the consultation is set out below.

## Responses to Consultation Questions

All Percentages are rounded so some figures may not add up and respondents that did not give an answer to a question have been omitted from the results.

### Questions 2 to 5: RHI support for Urban Biomass

#### **Question 2**

- a) Do you agree with the proposal to remove RHI support for biomass in urban areas on the gas grid? Yes / No.
- b) Please provide any available evidence in support of your response.

#### **Summary of responses:**

There were 58 responses to this question, with 55% of respondents disagreeing with the proposal to remove RHI support for new biomass installations in urban areas on the gas grid.

Many of those in favour of the proposal highlighted general concerns over CO<sub>2</sub>, NO<sub>x</sub> and particulate emissions from the burning of biomass. The availability of alternative RHI-eligible heating technologies was frequently cited with one respondent suggesting a focus should be placed on electrification. Several respondents cited the need to consider emissions from the transportation of biomass fuel. Concerns were also raised about a perceived lack enforcement

of existing permitting regulations leading to a disparity between factory registered emissions and actual levels of emissions from biomass installations.

Approximately a fifth of respondents against the proposal cited that emissions from unregulated burning processes such as open fires and stoves contributed more significantly to air quality issues than RHI supported biomass installations. Similarly, to those in favour of the proposal, two-thirds of those against it also cited that better regulation and enforcement through means such as mandating filtration systems would reduce emissions from biomass installations.

Concerns were also raised over the impact on the wider biomass supply chain should the proposal be taken forward, with a possible competitive advantage being given to the businesses that operate outside of the proposed geographical restriction.

Several respondents also highlighted the role that biomass plays in heat networks and for larger buildings such as schools and hospitals that are often located on the edge of urban areas and would be caught by the geographical restriction, suggesting that the likely counterfactual deployment would be fossil fuels where emissions impacting on air quality would be significantly worse. The use of waste materials as biomass feedstock was also highlighted by several respondents who suggested that the proposed restriction would lead to more of this being sent to landfill.

### Question 3

a) Do you agree that for the purposes of this restriction, the criterion should be based on being both urban and having access to the gas network? Yes / No.

b) Please provide any available evidence in support of your response.

### Summary of responses:

There were 58 responses to this question, with approximately three quarters of respondents disagreeing with the proposal that for the purpose of the restriction the criterion should be based on being both urban and having access to the gas network.

Percentages on this question are misleading as the reason for answering 'no' may be that the measure does not go far enough or that the respondent does not agree with any restriction on biomass, as such responses have been split into those that agreed with restriction proposed in question 2 and those that disagreed.

Those respondents that disagreed with the restriction proposed in question 2 overwhelmingly also answered 'no' to the proposed criterion for the restriction. One respondent highlighted that there was a danger of the blanket 'on gas grid' definition not allowing for situations in which connection to the gas grid is not economically viable. The potential for the loss of new biomass installations in urban periphery large industrial buildings and the contribution that these provide towards decarbonisation was noted by several respondents.

Approximately 40% of respondents that agreed with the proposed restriction also agreed with the suggested criterion, largely stating that it was sensible to implement a restriction in urban areas on the gas grid, but that support should remain where gas connection is not a viable option. Of the approximate 60% of respondents that agreed with the proposed restriction but disagreed with the criterion, a significant majority felt that the scope of the criterion was too narrow. This was on the basis that the government should be disincentivising the use of

biomass in situations where other renewable technologies could be used such as in buildings connected to the electricity grid where heat pumps could potentially be deployed.

#### **Question 4**

- a) If 'you have answered No' to Question 3, what method would be more appropriate and why?
- b) How could this criterion be verified by Ofgem?
- c) Please provide any available evidence in support of your response.

#### **Summary of responses:**

27 of the 32 respondents that disagreed with the proposed restriction also disagreed with the suggested criterion. They identified multiple alternative methods for restricting or controlling biomass deployment. Two-thirds of these respondents suggested that the criterion should be based on actual emissions and/or compliance with local air quality requirements. Suggestions on how this could be done included; making RHI emissions requirements stricter, mandating the installation of filtration systems which could be checked by Ofgem requiring a system schematic upon application to ensure the equipment has been fitted and/or insisting on regular maintenance checks which would be carried out by an accredited party. The implementation of regular emissions tests was suggested by several respondents as a means of highlighting those installations that are not compliant with existing emissions limits such as those set out by the RHI or MCPD, these installations could then subsequently be removed from the RHI or made to be compliant. It was also proposed by 2 respondents that support should only remain for biomass installations that use wood pellets in urban areas on gas grid, it was suggested that this could be implemented by requiring on EN PLUS A1 rated fuel be used and an emissions certificate to show compliance.

A range of alternative methodologies were suggested by those respondents that agreed with the proposed restriction but not with the proposed criterion. Several proposed a requirement for there to be no access to the electricity grid or other renewable alternatives for a biomass installation to be eligible for RHI support, which could be verified by existing information on access to the electricity grid. The importance of proper monitoring of feedstocks was also highlighted by several respondents, either by restricting RHI funding to only allow wood pellet boilers or through greater education on appropriate feedstocks and their relative emissions. Several of these respondents stated that the criterion should be based on either being in an urban area or having access to the gas grid, not both.

#### **Question 5**

- a) Should installations that comply with stricter emissions criteria such as those under the Medium Combustion Plant Directive be included in this proposal? Yes / No.
- b) Please provide any available evidence in support of your response.

#### **Summary of responses:**

There were 45 responses to this question. 58% of respondents disagreed with the proposal that MCPD compliant installations should be included under the proposed restriction.

Those that agreed with the proposal cited that larger plants will likely have inherently higher total emissions and are often located in urban areas that already have air quality concerns.

Those that disagreed with the proposal highlighted that abatement systems can be utilised for plant to be made compliant with stricter regulations, as can proper maintenance and use of correct feedstock. Several respondents argued that MCPD allows for a balance to be struck between the need for clean air and the decarbonisation of heat.

**Question 6. Geographical restrictions on biogas combustion**

- a) Should biogas combustion remain eligible without geographical restriction? Yes / No
- b) Please provide any available evidence in support of your response.

**Summary of responses:**

There were 42 responses to this question, with 83% agreeing that biogas combustion should remain eligible for RHI subsidy without geographical restriction.

For those respondents that agreed with the proposal, biogas was highlighted as a low regret option. Concerns were raised in a similar vein to those on restricting biomass subsidy geographically that this would produce an adverse competitive impact on the industry, with an advantage conferred to those in rural areas. The role of biogas in dealing with urban food waste, a factor that is likely to grow in respect of Defra's commitments in the Waste and Resources Strategy, was also highlighted by several respondents as reason not to restrict deployment.

Concerns were raised by those who felt restrictions should be brought forward around inefficiencies of on-site biogas usage, its contribution to background NOx emissions and the need for proper regulation and maintenance to avoid leakages.

**Question 7. Maintenance checks on existing biomass boilers**

- a) Should existing biomass boilers installed under the RHI be required to have regular maintenance checks? Yes / No
- b) Please provide any available evidence in support of your response.

**Summary of responses:**

There were 53 responses to this question, with 100% agreeing with the proposal to require regular maintenance checks for existing biomass boilers.

Respondents noted the importance of regular maintenance to the efficiency and low emission running of biomass boilers which produced better value for money to RHI recipients. Concerns were also raised by a number of respondents around the current self-certification regime. The point was also made by one respondent that maintenance checks potentially allow the government to better assess the emissions from biomass installations on a regular basis.

**Question 8. Other issues or proposals in relation to biomass in the RHI**

(a) Do you have any other proposals on how to minimize the air quality impacts of biomass in the RHI? If so please provide further details here.

(b) Are there any other issues you wish to raise with respect to RHI support for biomass in urban areas? If so please provide further details here.

**Summary of responses:**

a)

Filtration and emissions abatement technologies

The suggestion of mandating filtration systems on biomass installations was again raised by several respondents in response to this question.

**Feedstocks**

The importance of the type of feedstock being used to overall emissions from installations was repeatedly highlighted by respondents. A range of suggestions were put forward as to how to minimise the contribution of poor quality or inappropriate feedstocks to emissions including; the introduction of a requirement for fuel suppliers to provide fuel that is to the standard of that specified on the boiler emissions certificate, only permitting EN Plus A1 wood pellets as an RHI eligible feedstock and issuing better advice and guidance on the importance of fuel quality.

**Enforcement**

A greater role of Local Authorities in monitoring and enforcing air quality requirements was proposed by several respondents, suggestions included handing over a proportion of RHI payments to LAs to offset biomass impacts on air quality and greater sharing of information such as Environmental Permits with LAs to allow closer monitoring of emissions.

**Other means from reducing emissions**

Lowering existing RHI emissions requirements was recommended by one respondent and it was also suggested by one respondent that there could be an introduction of a tiered system of subsidy based on the emissions profile of an installation, following a model that exists in Germany.

Numerous respondents called for increased support for alternative technologies either through a subsidy to replace existing biomass boilers with an alternative renewable or low-carbon technology where possible or through greater incentives for technologies such as bioliquids.

Other suggestions included, a total ban on biomass, installation of air pollution monitors, banning domestic wood burning and a government investigation into the societal and healthcare costs of supporting biomass on the RHI.

b)

Various other issues were raised in relation to RHI support for biomass in urban areas in response to this question.

A total of twelve respondents reiterated concerns over the impact that the proposals included in the consultation would have on the biomass industry, the importance of biomass in overall plans for the decarbonisation of heat and/or concerns that a restriction on new biomass on the RHI could set a tone for a future policy direction that is not favourable to biomass.

One respondent raised concerns around Ofgem's capacity to audit and administer the proposals included in the consultation.

Two respondents raised general concerns that the burning of wood-fuel in biomass boilers causes the destruction of forests.

The importance and potential of intelligent boiler design in reducing emissions was raised by one respondent.

Several respondents also expressed the view that there was a need for greater public awareness around biomass and air quality.

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