



Department for
Business, Energy
& Industrial Strategy

CONSULTATION ON CONTROLLING THE COSTS OF BIOMASS CONVERSION AND CO-FIRING UNDER THE RENEWABLES OBLIGATION

September 2017

CONSULTATION ON CONTROLLING THE COSTS OF BIOMASS CONVERSION AND CO-FIRING UNDER THE RENEWABLES OBLIGATION

The consultation and Impact Assessment can be found on the BEIS section of GOV.UK:
<https://www.gov.uk/government/consultations/controlling-the-costs-of-biomass-conversion-and-co-firing-under-the-renewables-obligation>

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Any enquiries regarding this publication should be sent to us at RO@beis.gov.uk.

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General information

Purpose of this consultation

This consultation sets out the Government's proposals for controlling the costs of biomass conversion and co-firing under the Renewables Obligation, to apply from 1 April 2018. The two options proposed are a generator cap and a re-banding of support levels.

BEIS invites interested parties to submit comments and evidence in response to the two options proposed and the proposed exceptions.

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15 September 2017

Respond by:

26 October 2017

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Territorial extent:

This is a consultation for England and Wales only, issued by the Department for Business, Energy and Industrial Strategy (BEIS).

Decisions regarding biomass conversion and co-firing policy in Scotland and Northern Ireland are for the Scottish Government and Department of Economy in Northern Ireland respectively.

How to respond

Your response will be most useful if it is framed in direct response to the questions posed, though further comments and evidence are also welcome. Reasoning and evidence to support your answers will be particularly helpful. If you wish to refer to any long reports as part of your evidence, please identify the relevant sections that you are specifically referring to.

Where possible, responses should be submitted electronically via the e-consultation available at <https://beisgovuk.citizenspace.com/clean-electricity/controlling-the-costs-of-biomass-conversion>.

Responses emailed to RO@beis.gov.uk <mailto:SolarPV.Consultation@decc.gsi.gov.uk> or hard copies sent to the postal address above will also be accepted.

Additional copies:

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Confidentiality and data protection

Information provided in response to this consultation, including personal information, may be subject to publication or disclosure in accordance with the access to information legislation (primarily the Freedom of Information Act 2000, the Data Protection Act 1998 and the Environmental Information Regulations 2004).

If you want information that you provide to be treated as confidential please say so clearly in writing when you send your response to the consultation. It would be helpful if you could explain to us why you regard the information you have provided as confidential. If we receive a request for disclosure of the information we will take full account of your explanation, but we cannot give an assurance that confidentiality can be maintained in all circumstances. An automatic confidentiality disclaimer generated by your IT system will not, of itself, be regarded by us as a confidentiality request.

We will summarise all responses and place this summary on the [GOV.UK website](#). This summary will include a list of names or organisations that responded but not people's personal names, addresses or other contact details.

Quality assurance

This consultation has been carried out in accordance with the [Government's Consultation Principles](#).

If you have any complaints about the consultation process (as opposed to comments about the issues which are the subject of the consultation) please address them to:

enquiries@beis.gov.uk.

Executive Summary

Overview

Government is committed to keeping energy bills as low as possible for consumers. In 2011 it introduced the Levy Control Framework (LCF) to govern the budget for low carbon electricity schemes, including the Renewables Obligation (RO), which are paid for through consumer bills. Since 2015, Government has taken steps to control costs under the LCF. These have led to significant reductions in the projected costs to consumers of Government's low carbon electricity schemes.

Current evidence suggests technical changes to some combustion units could lead to significant unforecast deployment of biomass conversion and co-firing under the RO, resulting in additional costs of at least £110m to £195m per annum. It is important to protect bill payers from these costs.

This consultation document seeks views from interested parties on proposals for controlling the costs of biomass conversion and co-firing under the Renewables Obligation, to apply from 1 April 2018 (subject to the outcome of this consultation and Parliamentary approval). The two options proposed, summarised below, are:

- Option A: A generator cap; or
- Option B: A re-banding of support levels.

Either option will affect stations and units in England and Wales generating electricity under the biomass conversion or biomass co-firing bands, unless they are eligible for grandfathering.¹ The proposals do not apply to co-firing of bioliquids or low-range co-firing of relevant energy crops (see the 'Scope and proposed exceptions' section for further details).

We are seeking views on both possible approaches ahead of a final decision.

Option A: A generator cap

This option would introduce an annual cap on the total number of Renewables Obligation Certificates (ROCs) that can be issued to each biomass conversion or co-firing station in respect of generation at its non-grandfathered units. We propose an annual cap of 105,000 ROCs for each station to cover generation from **all** its non-grandfathered units. This would limit additional spend under the LCF in a way that takes into account maximum annual historic performance of any affected generator.

¹ Grandfathering under the RO reflects a policy intent that the rate of support that a generating station receives at the time of its accreditation will remain fixed for the entire period it receives support under that scheme.

Option B: Re-banding of support levels

This option would adjust the support levels for non-grandfathered units operating under the biomass conversion and co-firing bands, as set out in table 1 below. We propose that non-grandfathered biomass conversion and co-firing projects receive the same support under all these bands as they all present a risk to managing the LCF budget in the interests of consumers.

Table 1: Proposed RO bands for biomass conversion and co-firing projects

Band	Description	Support (ROC/MWh)
Low-range co-firing of biomass (excluding bioliquids)	Less than 50% regular biomass or energy crops co-fired in a unit	0.1
Mid-range co-firing of biomass (excluding bioliquids)	50% - less than 85% regular biomass or energy crops co-fired in a unit	0.1
High-range co-firing of biomass (excluding bioliquids)	85% - less than 100% regular biomass or energy crops co-fired in a unit	0.1
Biomass conversion	Electricity generated from 100% regular biomass, energy crops or regular bioliquids by a unit of a relevant fossil fuel station ²	0.1
Low-range co-firing with CHP (excluding bioliquids)	Less than 50% regular biomass or energy crops co-fired in a unit of a qualifying Combined Heat and Power (CHP) generating station	0.1
Mid-range co-firing with CHP (excluding bioliquids)	50% - less than 85% regular biomass or energy crops co-fired in a unit of a qualifying CHP generating station	0.1
High-range co-firing with CHP (excluding bioliquids)	85% - less than 100% regular biomass or energy crops co-fired in a unit of a qualifying CHP generating station	0.1
Conversion with CHP	Electricity generated from 100% regular biomass, energy crops or regular bioliquids by a unit of a relevant fossil fuel CHP station	0.1

² As defined in Schedule 5 of the Renewables Obligation Order 2015.

Introduction

Support for renewable electricity

- 1.1. The UK Government is clear that the transition to a low carbon economy is key to our long term economic and environmental prosperity. Alongside gas, nuclear power, low carbon transport fuels and renewable heat, renewable electricity generation supports energy security, helps us meet our decarbonisation objectives and brings green growth to all parts of the UK.
- 1.2. Our estimates show that we are on track to deliver 35% of the UK's electricity from renewables in 2020/21, exceeding our ambition of 30%.

Support for renewable electricity under the Renewables Obligation

- 1.3. The Renewables Obligation (RO) was introduced in 2002 as the Government's main policy measure to incentivise deployment of renewable electricity generation in the UK.
- 1.4. The RO closed to new capacity on 31 March 2017 (with exceptions that extend the deadline for certain projects to January 2019 in Great Britain and March 2019 in Northern Ireland). Going forward, the RO has been replaced in Great Britain by the competitive 'Contracts for Difference (CFD)' scheme, ensuring better value for money for bill payers.
- 1.5. The RO is administered by Ofgem, who issue Renewables Obligation Certificates (ROCs) to generators in relation to the renewable electricity they generate. Generators sell ROCs to suppliers or traders, with or without the electricity generated, as tradable commodities. This allows them to receive a premium in addition to the wholesale price of their electricity.
- 1.6. The RO places an obligation on UK electricity suppliers to produce a certain number of ROCs in respect of each MWh of electricity supplied during an obligation year (which runs from 1 April to 31 March). The total number of ROCs to be produced by suppliers – called 'the Obligation' – is set each year for the obligation year ahead. It is assumed that the cost to suppliers of meeting their obligation is passed on to consumers.
- 1.7. The level of the Obligation determines suppliers' demand for ROCs, which determines the price generators can realise for them. To ensure there is consistent demand, the Obligation is set annually for the obligation year ahead, based on the number of ROCs expected to be issued to accredited generators, plus 10% 'headroom'. BEIS is required to set the obligation as accurately as possible in accordance with the rules prescribed in RO legislation.³ Setting the Obligation too high could lead to an excessive cost being placed on consumer bills. Setting the Obligation too low would lead to an oversupply of ROCs. This could lead to a drop in ROC value and a lower buy-out fund, with

³ See the Renewables Obligation Order 2015 at <http://www.legislation.gov.uk/uksi/2015/1947/contents/made>

insufficient funds to pay Ofgem's administration costs and make redistribution payments to eligible suppliers, as happened for the first time in 2016.⁴

- 1.8. The RO works on the basis of three complementary obligations: one covering England and Wales, and one each covering Scotland and Northern Ireland. Responsibility for the RO in Scotland and Northern Ireland is devolved to the Scottish Government and Northern Ireland Assembly respectively. The relevant legislation for England and Wales is the Renewables Obligation Order 2015.

Controlling costs for consumers under the Levy Control Framework

- 1.9. The Levy Control Framework (LCF), introduced in 2011, enables Government to control the costs of supporting low carbon electricity paid for through consumers' energy bills. It reflects the importance Government places both on delivering low carbon electricity generation and keeping consumer bills affordable.
- 1.10. The LCF sets an annual budget on the projected costs of all BEIS's low carbon electricity levy-funded schemes until 2020/21. In addition to the RO, these comprise the Feed-in Tariff (FIT) and Contracts for Difference (CFD) schemes, including investment contracts under the final investment decision enabling for renewables (FIDeR) process (i.e. the early form of CFDs). If spend under the schemes in the LCF increases unsustainably, it will increase pressure on consumer bills unless it is matched by cost reductions elsewhere.
- 1.11. The LCF requires BEIS to take early action to bring costs down if forecasts exceed this budget, with urgent action required if forecasts exceed a 20% headroom ('the LCF headroom'). This headroom is in place because there are a number of uncertainties which affect projected expenditure including some, such as wholesale electricity prices, which are beyond the Government's control.
- 1.12. In 2015, a forecast overspend relative to the LCF budget was projected for the first time, to the value of £1.5bn. Since then, measures taken to control LCF spend have included early closure of the RO to onshore wind and solar, removing grandfathering for certain RO projects and the introduction of capacity caps and reduced tariff rates under the FIT scheme. The Government continues to take potential risks to the LCF very seriously and will act where necessary to ensure that costs to consumers are contained.
- 1.13. Forecasts published in March 2017 predict that the LCF budget will be exceeded in all years to 2020/21 by around £1bn but spend will stay within the 20% headroom.⁵ However, unforeseen deployment of biomass conversion and co-firing under the RO could present an increased risk of breaching this headroom.

⁴ Suppliers without enough ROCs to meet their obligation pay into a buy-out fund to cover the shortfall. The fund is used to cover Ofgem's administrative costs, with remaining proceeds paid back pro-rata to suppliers who presented ROCs.

⁵ LCF forecasts are updated regularly and published every six months by the Office of Budget Responsibility. For the forecasts published in March 2017, see 2.7 at <http://budgetresponsibility.org.uk/download/march-2017-economic-and-fiscal-outlook-supplementary-fiscal-tables-receipts-and-other/>

The role of biomass conversions and co-firing in the UK electricity mix

- 1.14. Biomass conversions are coal plants that have converted to run wholly on biomass, including wood pellets, straw, energy crops etc. Biomass co-firing plants use a mixture of biomass and coal. Generating stations with more than one combustion unit may fully or partially convert each unit on an individual basis.
- 1.15. Since the Government's 2012 Bioenergy Strategy⁶, we have been clear that biomass conversion and co-firing play a transitional role in decarbonising the grid. Conversion of coal power stations (or units) to full biomass generation, or co-firing with biomass, offered a quick, cost effective way to rapidly decarbonise electricity generation in the short to medium term by using sustainable biomass to displace coal from the system. It also contributed to security of supply, through the extension of the life of generating assets, during the transition to other more sustainable low-carbon generation.
- 1.16. Since the deployment of the earliest biomass conversion projects, UK electricity generation has become less carbon-intensive. Coal power stations are reaching the end of their working lives and the Government recently consulted on proposals to close unabated coal generation by 2025⁷. In parallel, other renewable generation technologies have matured to the point where they can be deployed reliably at large scale, and they are becoming increasingly affordable. When compared with these technologies, carbon savings from biomass conversion or co-firing are low or non-existent, and the cost of any savings is high.

Support for biomass conversion and co-firing under the RO

- 1.17. Following the last comprehensive review of support levels under the RO in 2012⁸, a number of new bands were created to support the full or partial conversion of coal-fired power stations to generate renewable electricity from biomass. The current bands are set out in table 2 below. A combustion unit might change bands from month to month depending on the proportion of biomass used in the month. This is described as moving between the conversion or co-firing bands.

Table 2: Current RO bands for biomass conversion and co-firing projects

Band	Description ⁹	Support (ROC/MWh)
Low-range co-firing of biomass (excluding bioliquids)	Less than 50% regular biomass or energy crops co-fired in a unit	0.5
Mid-range co-firing of biomass (excluding bioliquids)	50% - less than 85% regular biomass or energy crops co-fired in a unit	0.6

⁶ <https://www.gov.uk/government/publications/uk-bioenergy-strategy>

⁷ <https://www.gov.uk/government/consultations/coal-generation-in-great-britain-the-pathway-to-a-low-carbon-future>

⁸ <https://www.gov.uk/government/consultations/renewables-obligation-banding-review>

⁹ In each case up to 10% fossil fuel can be used in a unit for permitted ancillary purposes without affecting the eligibility of that unit for the band.

Band	Description ⁹	Support (ROC/MWh)
High-range co-firing of biomass (excluding bioliquids)	85% - less than 100% regular biomass or energy crops co-fired in a unit	0.9
Biomass conversion	Electricity generated from 100% regular biomass, energy crops or regular bioliquids by a unit of a relevant fossil fuel station ¹⁰	1.0
Low-range co-firing with CHP ¹¹ (excluding bioliquids)	Less than 50% regular biomass or energy crops co-fired in a unit of a qualifying CHP generating station	1.0
Mid-range co-firing with CHP ¹¹ (excluding bioliquids)	50% - less than 85% regular biomass or energy crops co-fired in a unit of a qualifying CHP generating station	1.1
High-range co-firing with CHP ¹¹ (excluding bioliquids)	85% - less than 100% regular biomass or energy crops co-fired in a unit of a qualifying CHP generating station	1.4
Conversion with CHP ¹¹	Electricity generated from 100% regular biomass, energy crops or regular bioliquids by a unit of a relevant fossil fuel CHP station	1.5

- 1.18. The RO is now closed to new projects (subject to certain grace periods) and the number of RO accredited stations that could claim biomass conversion or co-firing ROCs is relatively small. As set out in **Annex A**, there were eight remaining coal-fired power stations as at July 2017. Whilst these are all accredited under the RO as fuelled stations, the majority are due to move to the Capacity Market shortly, at which point they will become ineligible for RO support. No ROCs have ever been claimed at any of the co-firing or conversion with CHP bands.
- 1.19. However, the potential for additional deployment of large biomass conversion and co-firing units has significant implications for the RO. Large changes in the levels of biomass used in a combustion unit – and therefore the ROC band under which generation occurs - can be made relatively quickly without any prior notification. As well as potentially increasing spend under the RO, this adds considerable uncertainty to the task of forecasting future generation for the purposes of setting the Obligation. By comparison, whilst the output of other forms of large renewable energy projects can vary significantly from day to day, the overall average load factors over a longer time tend to a constant, well-characterised value. Unpredictability in the Obligation-setting process carries the risks set out in paragraph 1.7.

¹⁰ As defined in Schedule 5 of the Renewables Obligation Order 2015.

¹¹ For capacity accredited in or after 2015/16, these support levels are only available in circumstances where support under the Renewable Heat Incentive is not available. See article 35 of the Renewables Obligation Order 2015.

- 1.20. Government has noted previously that further action to control the costs to consumers of support for biomass conversion and co-firing could be needed. Following the 2012 consultation on biomass affordability¹², it was decided that the ROC rates for standard co-firing of biomass and co-firing of regular bioliquids with and without CHP should be reduced for two years to control the risk of additional RO spend. The Government Response to the consultations on the Renewables Obligation Transition and on Grace Periods, published on 12 March 2014¹³, stated that a mechanism would be required to increase stability across the biomass co-firing and conversion bands to ensure budgetary predictability and control within the RO. This was reiterated in October 2014's Explanatory Note to the CFD Budget notice.¹⁴
- 1.21. Later in 2014, Government became aware of a strong likelihood that deployment of biomass conversion and co-firing units would be higher than the middle of the ranges used to set budgets under the LCF. In order to control costs under the LCF and protect consumer bills, the Government stated in July 2015, following consultation, that the support rate under the RO for new biomass conversion and co-firing stations and combustion units should no longer be covered by Government's grandfathering policy.¹⁵ The removal of grandfathering also applies to generating stations or combustion units that are already receiving support under the RO and move for the first time into the mid-range co-firing, high-range co-firing or biomass conversion bands after 12 December 2014 (the date of the 2014 consultation).
- 1.22. Two main exceptions from the decision to remove grandfathered support for new mid- and high-range co-firing and biomass conversion were provided:
- Any station or combustion unit that moved into the mid- or high-range co-firing bands and generated electricity eligible for ROCs under these bands before 12 December 2014, and then moved to full conversion before 12 December 2015; and
 - Any station or combustion unit that was required to terminate an investment contract awarded through the final investment decision enabling for renewables (FIDeR) process for State aid reasons (up to the point of RO closure on 31 March 2017).
- 1.23. The Government Response stated that should combustion units move up the RO biomass bands in the future, the changes to grandfathering policy would improve the ability to manage the budgetary impact, for example by changing their support levels should the conditions be met for a banding review.
- 1.24. The Government Response also reiterated previous Government statements that further mechanisms to improve budgetary control across the biomass conversion and co-firing bands might be needed in the future. It stated that this was especially the case

¹² <https://www.gov.uk/government/consultations/ensuring-biomass-affordability-and-value-for-money-under-the-renewables-obligation>

¹³ <https://www.gov.uk/government/consultations/transition-from-the-renewables-obligation-to-contracts-for-difference>

¹⁴ See footnote 2 at

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/360278/Explanatory_Note_To_Set_Out_The_Wider_Context_Of_The_CFD_Budget_Notice_Alternative_Version.pdf

¹⁵ <https://www.gov.uk/government/consultations/changes-to-grandfathering-policy-with-respect-to-future-biomass-co-firing-and-conversion-projects-in-the-renewables-obligation>

taking into account (but not limited to) the higher levels of stability that might be needed in the RO after its closure to new entrants in 2017.

The issue

- 1.25. Despite the changes to grandfathering policy, Ofgem data now suggest that deployment of biomass conversions may be significantly higher than estimated in the LCF forecasts published in March 2017.¹⁶ This deployment may result in **an additional spend under the RO of around £110m to £195m per annum** and an increase to average household bills of £1 to £2 per annum from 2018/19 (2011/12 prices). This increased deployment was unforeseen when the current support levels for biomass conversion and co-firing were set in 2012.
- 1.26. There is also a possibility of additional coal-fired generation capacity converting to biomass. Under this 'highest additional spend' scenario, high deployment of additional conversion units could result in an increase in RO spend of around £250m per annum from 2018/19 and an increase to average household bills of £3 per annum from 2018/19 (2011/12 prices).
- 1.27. The LCF budget is currently forecast to be overspent in each year of operation despite the cost control measures which have already been taken since 2015. Any increase in spend for one technology or support scheme under the LCF will take our forecasts increasingly over the budget, adding further costs to consumer bills. Government takes controlling the costs of supporting low carbon policies seriously and so must consider taking action to prevent additional burden being put on consumers.
- 1.28. BEIS must also take into account and manage a number of other levy spending risks, such as the risk that total deployment under the RO or FIT schemes may be higher than our medium estimates, or that generating stations may have higher load factors than those assumed when allocating CFDs or investment contracts. According to current forecasts, additional levels of biomass conversion and co-firing under the RO, alongside these other spending risks, would present a proportionately higher risk of breaching the LCF headroom. This would result in excessive costs to consumers of supporting low carbon policies.
- 1.29. We therefore need to consider urgent legislative action to limit further unforecast LCF spend on biomass conversion and co-firing under the RO. We believe there are two options for achieving this objective in a way that protects consumers and is fair to all generators. We are seeking views on both possible approaches ahead of a final decision.

¹⁶ Data on ROCs issued can be found in Ofgem's publicly available Certificates Register: <https://www.renewablesandchp.ofgem.gov.uk/Public/ReportManager.aspx?ReportVisibility=1&ReportCategory=0>

Option A: Generator cap

This chapter explains the methodology behind the generator cap proposal and the details of how it would be implemented.

Setting a generator cap

- 2.1. In order to increase control over LCF spend and protect consumers, we could implement an annual cap on the total number of biomass conversion or biomass co-firing ROCs that can be issued to each biomass conversion or co-firing station in respect of generation at its non-grandfathered units. The cap would apply each year up until the point at which a station is no longer eligible to receive support under the RO. Grandfathered units and stations would not be affected by the cap.
- 2.2. There are various ways in which the level of an annual generator cap could be set, such as using an average of historic annual ROC claim for all affected biomass conversion and co-firing plants or setting an individual cap for each plant based on that plant's historic generation.
- 2.3. We consider that **an annual cap of 105,000 ROCs applied to each biomass conversion or co-firing station in respect of generation from all of its non-grandfathered units** is a fair approach, limiting additional LCF spend in a way that takes into account maximum annual historic performance of any affected generator. The highest number of ROCs issued under the biomass conversion and co-firing bands to non-grandfathered units of any station in any year prior to 2017/18 was, according to Ofgem, 105,000 (to the nearest 500 ROCs) in 2016/17. Setting the cap at 105,000 ROCs would therefore allow generators to continue generating in line with the levels of deployment at the co-firing bands recorded in previous years.
- 2.4. We consider that this approach is preferable to setting an individual cap for each plant based on that plant's historic generation. An individual cap would result in some plants' ROC claim being capped at zero, effectively ending their RO accreditation. It would also be more complex to administer than the proposed approach.
- 2.5. A generator cap could be set in either ROCs or MWh of electricity generated. We propose to set the cap in ROCs because it offers greater certainty over LCF spend and greater clarity to generators. If the cap were set in MWh of electricity generated, movement between the bands could result in LCF spend being higher than intended as more ROCs are issued for the same amount of generation at higher bands.
- 2.6. Our analysis suggests that an annual cap of 105,000 ROCs applied to each biomass conversion or co-firing station in respect of generation at its non-grandfathered units would limit additional LCF spend on biomass conversions and co-firing to around £5m per year (central estimate, 2011/12 prices) from 2018/19.

Details of implementation

- 2.7. ROCs for eligible generation would continue to be issued to generating stations on a monthly basis, three months after the month of generation.
- 2.8. Once a biomass conversion or co-firing station has been issued a total of 105,000 ROCs in an obligation year in respect of generation by its non-grandfathered units, no more ROCs would be issued to it in respect of any further generation by those non-grandfathered units.
- 2.9. For any station comprising only non-grandfathered units, the cap of 105,000 ROCs would apply to **the total number of ROCs issued to all its units**. It would be for the operator of the station to decide whether to reach its cap through generation from a single unit or to spread generation over more than one unit.
- 2.10. For any station comprising a combination of non-grandfathered and grandfathered units, the cap of 105,000 ROCs would apply only to ROCs issued to the non-grandfathered units. **The number of ROCs issued to the grandfathered units would not be capped.**
- 2.11. Under this option, we do not propose to change the current levels of support specified in the banding provisions. Up until a station has reached its cap, the number of ROCs issued per MWh of electricity generated would remain as set out in table 2 above.
- 2.12. We do not propose that any ROCs claimed under the 'Co-firing of regular bioliquid' or 'Low-range co-firing of relevant energy crops' bands should be subject to the cap, as we do not consider that generation within these bands presents a risk to management of the LCF at the moment (see the chapter on 'Scope and proposed exceptions'.)
- 2.13. At fuelled stations comprising multiple units, net renewable electricity eligible for support under the RO can currently be apportioned not at the unit level but according to the date at which the capacity accredited and the way in which electricity is generated. The band is determined through analysing the fuel inputs for each unit as determined by the Fuel Measurement and Sampling procedures¹⁷.
- 2.14. In order to ensure that any station comprising both non-grandfathered and grandfathered units is subject to a generator cap only in respect of ROCs issued to its non-grandfathered units, it would be necessary to enable ROCs to be apportioned per unit rather than per ROC band.
- 2.15. If this option is selected, it is our intention to legislate so that the generator cap would take effect on 1 April 2018. In the case of some unforeseen delay to the legislation, the cap would be applied to stations on a pro-rated basis. For instance, if the legislation entered into force three months after the start of the obligation year, the cap applied would be set at three-quarters of 105,000 (78,750 ROCs) for the rest of that year. Stations would then be subject to the full cap of 105,000 ROCs in subsequent years.

¹⁷ <https://www.ofgem.gov.uk/environmental-programmes/ro/applicants/fuelled-stations-and-fuel-measurement-and-sampling-fms>

- 2.16. If a generating station did not claim the maximum number of ROCs set by the cap in a given year, it would **not** be able to carry over any ROC allowance to increase its cap in a subsequent year.

Impacts

- 2.17. The accompanying Impact Assessment outlines the expected impacts of the proposed generator cap, including on LCF spend.¹⁸ As noted in the Impact Assessment, the generator cap option offers greater certainty about LCF spend than the banding review option (full details of the banding review option are set out in the Option B section below).
- 2.18. A cap on the number of ROCs that can be issued for biomass conversion and co-firing would increase certainty for the setting of the Obligation. Setting the Obligation requires BEIS to predict the number of ROCs to be issued to accredited renewable generators in the upcoming obligation year. As explained in paragraph 1.7, it is important that this is done as accurately as possible.
- 2.19. While the proposed cap would limit the amount of RO support affected stations could receive each year, generation beyond the point at which the cap had been reached would not be prevented from selling into the wholesale market.
- 2.20. There is uncertainty around the effect of the proposed generator cap on the total annual generation and fuel mix of affected generators, due to a lack of robust evidence on the specific financial positions of individual generators and the strategic responses their operators might take. Our Impact Assessment currently assumes therefore that if RO support is restricted, generators may still choose to continue to use increased levels of biomass. However, it is possible that restricting RO support may lead to non-grandfathered co-firing units that might otherwise operate as biomass conversions burning coal instead. This could have consequences for greenhouse gas emissions, air quality and resource costs. The Government recently consulted on proposals to close unabated coal generation by 2025.
- 2.21. We would welcome your views on BEIS's assessment of the impact of the proposed generator cap on the generating behaviour of biomass conversion and co-firing plants.

¹⁸ See the Impact Assessment at: <https://www.gov.uk/government/consultations/controlling-the-costs-of-biomass-conversion-and-co-firing-under-the-renewables-obligation>

Consultation Questions

We would welcome your views on the following questions:

Consultation Questions

Q1	<p>Do you agree that the cap on the total number of ROCs that can be issued to each biomass conversion or co-firing station in respect of generation from all its non-grandfathered units should be based on the highest number of ROCs issued to the non-grandfathered units of any affected station in any year prior to 2017/18? This would equate to a cap of 105,000 ROCs a year.</p> <p>If not, how would you recommend setting the level of the cap and why?</p>
Q2	<p>Do you agree with the proposed approach of pro-rating the level of the generator cap in the event that its introduction is delayed?</p> <p>If not, how would you recommend applying the cap in circumstances where it is introduced after the start of an obligation year and why?</p>
Q3	<p>What are your views on the likely impacts of the proposed generator cap, particularly on the annual generation and fuel mix of affected generators?</p> <p>Please provide evidence to support your answer.</p>

Option B: Re-banding of support levels

Another way of meeting the policy objective of limiting unforecast LCF spend would be to carry out a banding review in order to revise the support levels for non-grandfathered biomass conversion and biomass co-firing units. This chapter explains this option and the reasons for the new level of support proposed.

Legal powers to conduct a banding review

- 3.1. The Electricity Act 1989 ('the Act') gives the Secretary of State the power to carry out a banding review of support under the RO if satisfied that one or more of the conditions set out in article 42(2) of the Renewables Obligation Order 2015 have been met. These conditions include:
 - g) In an obligation period the number of ROCs issued by, produced to or likely to be produced to the Authority exceeds or is likely to exceed the total number of ROCs required to be produced in respect of that obligation period by designated electricity suppliers;
 - h) An event has occurred which is relevant to the matters set out in section 32D(4) of the Electricity Act 1989 (see paragraph 3.11 below), which was not foreseen when these bands were made, and has had or is likely to have, a material effect on the operation of the RO Order.
- 3.2. The 2017/18 Obligation was set at 108.2 million ROCs before headroom. In accordance with RO legislation, a 10% headroom ('RO headroom') is added to ensure that there is a demand for ROCs and to act as a buffer for any difference between our estimates when setting the Obligation and actual ROC outturn. Including the 10% RO headroom gives a total Obligation of 119.1 million ROCs for 2017/18.¹⁹
- 3.3. When the 2017/18 Obligation was set it assumed that there would be two biomass conversions units generating at high levels and a small number of units that would co-fire for short periods of time under the low co-firing band.
- 3.4. Ofgem data have shown that additional unforecast biomass conversion deployment has occurred in the present obligation year. This constitutes an event that is relevant to Section 32D(4)(e): the number of ROCs issued by the Authority and the impact this will have on the ROC market and on consumers.
- 3.5. Under the present ROC rate for biomass conversion, additional unforeseen deployment at this band is likely to result in significantly more ROCs being issued in 2017/18 than

¹⁹ <https://www.gov.uk/government/publications/renewables-obligation-level-calculations-201718>

estimated when setting the 2017/18 Obligation. If more ROCs than expected are also issued for other technologies (as happened in 2013/14 and 2015/16) the total number of ROCs issued will exceed the total number of ROCs required to be presented by suppliers. This could lead to a potential decrease in the ROC price. This would disrupt the operation of the ROC market so that it does not function effectively as provided for in the RO Order.²⁰

- 3.6. The conversion to biomass of additional large-scale generating capacity was unforeseen when the last banding review was carried out. At that time, it was thought that conversion to biomass would require significant upfront capital costs. The fact that additional capacity has in the meantime been able to convert to biomass without the revenue certainty provided by grandfathering suggests that the economics of conversion have changed unexpectedly since the bands were last set and since grandfathering was removed in 2015.
- 3.7. Looking ahead, additional costs to consumers are expected from additional biomass conversion deployment (see paragraph 1.25). This is particularly undesirable as forecasts predict that the LCF budget will be exceeded in all years to 2020/21 by around £1bn, which was not foreseen when the present ROC rate for biomass conversion was set (see page 9).
- 3.8. While generation under the biomass conversion band poses the greatest risk to the LCF, there is a possibility of stations generating large amounts of electricity at any of the biomass co-firing bands, which would also have a negative impact on consumers if the current support rates are maintained. Even additional generation at the low-range co-firing band could result in an additional £48.7m of LCF spend per year.
- 3.9. The additional generation from biomass conversion adds significant uncertainty to the task of forecasting future generation from biomass conversion and co-firing units. This is due to the large capacity of the additional deployment and the fact that big changes in the levels of biomass generation in a combustion unit (and therefore the ROC band at which a unit operates) can be made by the operator relatively quickly without the need for any formal prior notification. By comparison, whilst the output of other forms of large renewable energy projects can vary significantly from day to day, the overall average load factors over a longer time tend to a constant, well-characterised value.
- 3.10. The uncertainty associated with future generation from large biomass conversion and co-firing units has a significant effect on the operation of the RO scheme since it makes the effective operation of the ROC market and management of its impact on consumers through accurate Obligation-setting very difficult. The risks associated with inaccurate Obligation-setting are explained in paragraph 1.7.

Methodology for setting the banding provisions

- 3.11. Having decided that there is justification to carry out a banding review, the Secretary of State must have regard to the matters set out in section 32D(4) of the Electricity Act 1989 before making banding provisions. These matters are as follows and are considered in further details in the paragraphs below:

²⁰ <http://www.legislation.gov.uk/ukxi/2015/1947/contents/made>

- a) The costs (including capital costs) associated with generating electricity from each of the renewable sources or with transmitting or distributing electricity so generated (and including any costs associated with the production or supply of heat produced in connection with that generation);
- b) The income of operators of generating stations in respect of electricity generated from each of those sources or associated with the generation of such electricity (including any income connected with the acquisition of the renewable source, the supply of heat produced in connection with the generation, and the disposal of any by-product of the generation process);
- c) The effect of paragraph 19 of Schedule 6 to the Finance Act 2000 (supplies of electricity from renewable sources exempted from climate change levy) in relation to electricity generated from each of those sources;
- d) The desirability of securing the long term growth, and economic viability, of the industries associated with the generation of electricity from renewable sources;
- e) The likely effect of the proposed banding provision on the number of ROCs issued by the Authority, and the impact this will have on the market for such certificates and on consumers;
- f) The potential contribution of electricity generated from each renewable source to the attainment of any target which relates to the generation of electricity or the production of energy and is imposed by, or results from or arises out of, an EU obligation.

Costs and incomes - sections 32D(4)(a), (b) and (c)

- 3.12. In 2012, DECC estimates of levelised costs for biomass conversion projects in 2013 were around £113/MWh (2014 prices). Evidence from Arup published in 2016²¹ indicated that generation costs had fallen to around £87/MWh (2014 prices).
- 3.13. Biomass pellet prices are a significant component of the levelised costs of biomass conversions and co-firing units. Evidence from Argus Media shows that since 2013, when the current ROC bands came into effect, biomass pellet prices have significantly decreased from around \$165/t (CIF ARA) in 2013 to just over \$113/t (CIF ARA) in early 2017.²² The Argus Media Biomass Report of 19 July 2017 suggests rising forward prices but there remains uncertainty around these estimates.
- 3.14. Generator incomes have also decreased, due to a decrease in the wholesale electricity price and the removal of the Climate Change Levy exemption for renewable electricity. However, for conversions, the latest evidence suggests that the reduction in costs has been greater than the reduction in revenues.

²¹https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/566718/Arup_Renewable_Generation_Cost_Report.pdf

²² CIF ARA refers to the prices of pellets traded on a cost, insurance and freight (CIF) basis in the Amsterdam-Rotterdam-Antwerp area.

Desirability of securing the long term growth and economic viability of associated industry - section 32D(4)(d)

- 3.15. The Government has been clear about its intentions for further growth of biomass conversion and co-firing. Since the 2012 Bioenergy Strategy, we have stated that biomass conversion and co-firing play a transitional role in decarbonising the grid. In recognition of this, all RO and CFD support for biomass conversions and co-firing ends in 2027.²³
- 3.16. The 2014 grandfathering consultation made it clear that we had sufficient biomass conversions and co-firers within the RO and no longer wished to expand our support further. We have a limited available budget for supporting renewables which is already forecast to be overspent. Supporting additional biomass conversions and co-firing units, which are large and can operate with high load factors, would have a significant impact on the LCF.

Impact on consumers - section 32D(4)(e)

- 3.17. If the current rates of support for biomass conversions are maintained at 1 ROC/MWh (without CHP) and 1.5 ROC/MWh (with CHP), increased deployment could result in an additional unanticipated cost to consumers of around £195m per annum, bringing the total cost of supporting biomass conversions and co-firing to around £585m per annum. The additional spend could add up to £2 to average annual household electricity bills (2011/12 prices). Under the 'highest additional spend' scenario, high deployment of conversion units could result in an increase in RO spend of around £250m per annum from 2018/19 and an increase to average household bills of £3 per annum from 2018/19 (2011/12 prices).
- 3.18. Large biomass conversion and co-firing stations have the potential to generate large amounts of electricity at any of the biomass co-firing bands. To take low-range co-firing as an example, if the current rate of support is maintained at 0.5 ROC/MWh, increased deployment could result in an additional unanticipated cost to consumers of around £48.7m per year (2011/12 prices).
- 3.19. Our estimates suggest that reducing the support rates to 0.1 ROC/MWh for all biomass conversion and biomass co-firing bands would limit additional LCF spend under these bands. Table 2 in the accompanying Impact Assessment sets out our estimate of the likely LCF impact both of maintaining the current rates of support and of the proposed reduction in support rates.²⁴

Potential contribution to targets arising out of an EU Obligation - section 32D(4)(f)

- 3.20. The UK's National Renewable Energy Action Plan, published in 2010, adopted a sub-target of 30% of electricity to be generated by renewable sources by 2020. Our estimates show that we are on track to deliver 35% of the UK's electricity from

²³ Note that biomass co-firing is not eligible for the CFD scheme.

²⁴ See the Impact Assessment at: <https://www.gov.uk/government/consultations/controlling-the-costs-of-biomass-conversion-and-co-firing-under-the-renewables-obligation>

renewables in 2020/21. Additional biomass conversion and co-firing deployment beyond that previously forecast is therefore not needed to meet the UK's renewable electricity targets.

Current and proposed support levels

- 3.21. The banding review in 2012 created different bands for co-firing with varying levels of biomass and full conversion (using 100% biomass). This was done to reflect the differing levels of investment and risk that existed between co-firing and conversion, and to create stepping stones to encourage full conversion.
- 3.22. The current support for new biomass conversion and co-firing projects under the RO is set out in table 3 below.

Table 3: Current RO bands for biomass conversion and co-firing projects

Band	Description ²⁵	Support (ROC/MWh)
Low-range co-firing of biomass (excluding bioliquids)	Less than 50% regular biomass or energy crops co-fired in a unit	0.5
Mid-range co-firing of biomass (excluding bioliquids)	50% - less than 85% regular biomass or energy crops co-fired in a unit	0.6
High-range co-firing of biomass (excluding bioliquids)	85% - less than 100% regular biomass or energy crops co-fired in a unit	0.9
Biomass conversion	Electricity generated from 100% regular biomass, energy crops or regular bioliquids by a unit of a relevant fossil fuel station ²⁶	1.0
Low-range co-firing with CHP ²⁷ (excluding bioliquids)	Less than 50% regular biomass or energy crops co-fired in a unit of a qualifying CHP generating station	1.0
Mid-range co-firing with CHP ²⁷ (excluding bioliquids)	50% - less than 85% regular biomass or energy crops co-fired in a unit of a qualifying CHP generating station	1.1
High-range co-firing with CHP ²⁷ (excluding bioliquids)	85% - less than 100% regular biomass or energy crops co-fired in a unit of a qualifying CHP generating station	1.4

²⁵ In each case up to 10% fossil fuel can be used in a unit for permitted ancillary purposes without affecting the eligibility of that unit for the band.

²⁶ As defined in Schedule 5 of the Renewables Obligation Order 2015.

²⁷ For capacity accredited in or after 2015/16, these support levels are only available in circumstances where support under the Renewable Heat Incentive is not available. See article 35 of the Renewables Obligation Order.

Conversion with CHP ²⁷	Electricity generated from 100% regular biomass, energy crops or regular bioliquids by a unit of a relevant fossil fuel CHP station	1.5
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3.23. In this banding review exercise we have considered all of the statutory matters as set out in paragraphs 3.12 to 3.20 above. However, we have arrived at the proposed support rates as a result of a number of changes since the current bands were set:

Increased pressure on the LCF and associated impacts on consumers

- In 2015, an overspend relative to the LCF budget was projected for the first time, to the value of £1.5bn. In response, Government took steps to control future costs under the LCF including removing grandfathering for certain biomass conversion and co-firing projects under the RO.
- Forecasts published in March 2017 predict that the LCF budget will be exceeded in all years to 2020/21 by around £1bn but spend will stay within the 20% LCF headroom permitted to reflect the inherent volatility of support costs. Additional unforecast deployment of biomass conversion and co-firing under the RO would further increase the burden on consumers, moving spend closer to the upper limits of the LCF headroom.

The changing role of biomass conversions and co-firing in the UK's electricity mix

- Biomass conversions have contributed to decarbonising the UK electricity grid by displacing carbon intensive coal generation. However, other renewable generation technologies have matured to the point where they can be deployed reliably at large scale, and they are becoming increasingly affordable.
- Compared with these technologies, carbon savings from biomass conversion or co-firing are low or non-existent, and the cost of any savings is high. Therefore, while we acknowledge the important role biomass conversion has played in decarbonising UK electricity generation in the short to medium term, it is no longer necessary to incentivise further deployment.

Strong progress against the UK's renewable electricity target

- A key objective of the 2012 banding review was to bring forward greater levels of renewable deployment to enable the UK to meet its legally binding 2020 renewable energy target. Bands were set to incentivise this additional deployment in the most cost effective manner.
- As outlined in paragraph 3.20, we no longer need to incentivise further deployment under the RO in order to meet our renewable electricity ambitions.

3.24. After considering all the matters set out in section 32D(4), we propose to adjust the support levels for non-grandfathered units operating under the biomass conversion and biomass co-firing bands, as set out in table 4 below. At this level we estimate that RO spending on biomass conversion and co-firing would minimise additional LCF spend.

3.25. We propose that non-grandfathered biomass conversion and co-firing projects receive the same support at all these bands as they all present a risk to the LCF budget. While biomass conversion poses the greatest risk to the LCF, large biomass conversion and

co-firing stations have the potential to generate large amounts of electricity at any of the biomass co-firing bands, which could also significantly impact the LCF if current support rates are maintained. Even additional generation at the low-range co-firing band could result in an additional £48.7m (2011/12 prices) of LCF spend per year from 2018/19.

- 3.26. We propose revising the support levels for these bands both with and without Combined Heat and Power (CHP). While biomass conversions and co-firing plants with CHP would use some of their input energy to generate heat, their electricity output is still likely to be significant. In practice there have been no claims against these bands to date and we consider it very unlikely that any of the existing plants would be able to generate CHP.
- 3.27. We do not propose to adjust the support levels for the ‘Co-firing of regular bioliquid’ and ‘Low-range co-firing of relevant energy crops’ bands as we do not consider that they present a risk to the LCF (see the chapter on ‘Scope and proposed exceptions’.)

Table 4: Proposed RO bands for biomass conversion and co-firing projects

Band	Description	Support (ROC/MWh)
Low-range co-firing of biomass (excluding bioliquids)	Less than 50% regular biomass or energy crops co-fired in a unit	0.1
Mid-range co-firing of biomass (excluding bioliquids)	50% - less than 85% regular biomass or energy crops co-fired in a unit	0.1
High-range co-firing of biomass (excluding bioliquids)	85% - less than 100% regular biomass or energy crops co-fired in a unit	0.1
Biomass conversion	Electricity generated from 100% regular biomass, energy crops or regular bioliquids by a unit of a relevant fossil fuel station ²⁸	0.1
Low-range co-firing with CHP (excluding bioliquids)	Less than 50% regular biomass or energy crops co-fired in a unit of a qualifying Combined Heat and Power (CHP) generating station	0.1
Mid-range co-firing with CHP (excluding bioliquids)	50% - less than 85% regular biomass or energy crops co-fired in a unit of a qualifying CHP generating station	0.1
High-range co-firing with CHP (excluding bioliquids)	85% - less than 100% regular biomass or energy crops co-fired in a unit of a qualifying CHP generating station	0.1

²⁸ As defined in Schedule 5 of the Renewables Obligation Order 2015.

Conversion with CHP	Electricity generated from 100% regular biomass, energy crops or regular bioliquids by a unit of a relevant fossil fuel CHP station	0.1
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Impacts

- 3.28. The accompanying Impact Assessment outlines the expected impacts of the proposed re-banding of support levels, including on LCF spend.²⁹
- 3.29. While the proposed re-banding of support levels would reduce the amount of RO support affected stations could receive for their generation, it would not prevent them from generating. There is uncertainty around the effect of the proposed re-banding on the total annual generation and fuel mix of affected generators, due to a lack of robust evidence on the specific financial positions of individual generators and the strategic responses their operators might take. Our Impact Assessment currently assumes therefore that if RO support is restricted, generators may still choose to continue to use increased levels of biomass. However, it is possible that restricting RO support may lead to non-grandfathered co-firing units which might otherwise operate as conversions burning coal instead. This could have consequences for greenhouse gas emissions, air quality and resource costs. The Government recently consulted on proposals to close unabated coal generation by 2025.
- 3.30. We would welcome your views on BEIS’s assessment of the impact of the proposed re-banding on the generating behaviour of biomass conversion and co-firing plants.

Consultation Questions

We would welcome your views on the following questions:

Consultation Questions

Q4	Do you agree with the proposed level of support of 0.1 ROC/MWh for all biomass conversion and biomass co-firing bands? Please give reasons and provide evidence to support your answer.
Q5	What are your views on the likely impacts of the proposed re-banding to 0.1 ROC/MWh for all biomass conversion and biomass co-firing bands, particularly on the annual generation and fuel mix of affected generators? Please provide evidence to support your answer.

²⁹ See the Impact Assessment at: <https://www.gov.uk/government/consultations/controlling-the-costs-of-biomass-conversion-and-co-firing-under-the-renewables-obligation>

Scope and proposed exceptions

This chapter outlines which generating stations and units the proposals are intended to affect and the exceptions that we propose to apply.

Scope

- 4.1. The proposed policy options are intended to apply only to non-grandfathered units or stations in England and Wales operating under the biomass conversion or co-firing bands.³⁰
- 4.2. Our position on grandfathering with respect to biomass conversions and co-firing is as set out in the 2015 Government response on changes to grandfathering policy with respect to future biomass co-firing and conversion projects in the Renewables Obligation,³¹ subject to certain revisions detailed in paragraphs 4.13 to 4.22 below. The relevant aspects of the grandfathering policy are summarised in the following paragraphs.
- 4.3. Generating stations or combustion units are non-grandfathered if, subject to the exceptions in paragraphs 4.9 to 4.10 below, they took any of the following actions for the first time on or after 12 December 2014:
 - a) accredited as a new fuelled station under the RO and received ROCs under one of the biomass co-firing or conversion bands; or
 - b) moved from the low-range co-firing band into the mid- or high-range co-firing or biomass conversion bands under the RO; or
 - c) moved from the mid-range co-firing band into the high-range co-firing or biomass conversion bands under the RO; or
 - d) moved from the high-range co-firing band to a biomass conversion band under the RO; or
 - e) received ROCs under one of the biomass co-firing with Combined Heat and Power (CHP) or conversion with CHP bands.
- 4.4. Generating stations or combustion units which lose their grandfathered status due to moving up the biomass bands would **not** regain the benefit of grandfathering if they subsequently moved back down the bands at a later date.

³⁰ Grandfathering under the RO has reflected a policy intent that the *rate of support* that a generating station or unit receives at the time of its accreditation will remain fixed (meaning the station or unit would not be affected by a subsequent banding review). If the generator cap is introduced, it is our intention that grandfathered units should also retain their right to receive ROCs for all eligible generation (i.e. the cap will not apply to them).

³¹ <https://www.gov.uk/government/consultations/changes-to-grandfathering-policy-with-respect-to-future-biomass-co-firing-and-conversion-projects-in-the-renewables-obligation>

4.5. The following conditions also apply:

- a) A station or combustion unit is treated as moving into a new band from the moment it starts generating electricity in respect of which ROCs under that new band are issued;
- b) Where additional capacity is added to any accredited generating station comprising units already covered by the previous grandfathering policy, the additional capacity will not benefit from grandfathering;
- c) Where a station or combustion unit which benefits from the grandfathering policy is combined with a station or unit which does not benefit from grandfathering to create an enlarged station or unit, the total combined capacity of the new enlarged unit will no longer benefit from grandfathering.

4.6. Co-firing of biomass within a combustion unit at relatively low rates, i.e. at the level eligible for the low-range band, is relatively low cost and potentially volatile. Therefore, grandfathering has never applied to combustion units generating within the low-range co-firing band. This remains the case.

4.7. As outlined in the 2015 Government Response on changes to grandfathering policy, if an accredited dedicated biomass station were to use more than 15% fossil fuel in any six month period it may then fall into the definition of Relevant Fossil Fuel Station (RFFS).³² In this case the station would receive a grandfathered ROC rate for the relevant biomass conversion or co-firing band in place at that time. It would **not be able to benefit from grandfathering in respect of the biomass conversion or co-firing band in place when it accredited as a dedicated biomass station**. Depending on the policy option implemented, it would be subject either to the new support rate in place at the time when it becomes an RFFS or to the generator cap. See paragraph 4.10 for how grandfathering applies to any stations that have changed from a dedicated biomass station to an RFFS before the implementation of our proposed cost control measures.

Proposed exceptions

4.8. Units that received ROCs under the mid-range co-firing, high-range co-firing or conversion band before 12 December 2014 do not fall within the scope of the proposals, providing that subsequent to that date, they do not move up the bands or move down the bands for a sustained period as set out in paragraph 4.18. They will retain grandfathered support in the relevant band and not be affected by either of our proposed options.

4.9. In addition, it is our intention that any combustion unit that moved into the mid- or high-range co-firing bands and generated electricity eligible for ROCs under these bands before 12 December 2014, and then moved to full conversion before 12 December 2015, should retain grandfathered support and therefore not be affected by either of our proposed options, providing they do not move down the bands for a sustained period as set out in paragraph 4.18.

³² As set out in Schedule 5 of the Renewables Obligation Order 2015.

- 4.10. Certain stations may have previously operated as a dedicated biomass project and then become an RFFS due to using more than 15% fossil fuel across a six month period. Any such stations that generated at a conversion or co-firing band before the implementation of our proposed cost control measures are able to benefit from grandfathering of the support for that band in place at the time when it became an RFFS, in line with the 2015 Government Response on changes to grandfathering policy. Such stations would not be affected by either of our proposed options.
- 4.11. There are other bands at which co-firing ROCs could potentially be claimed, such as the 'Co-firing of regular bioliquid' and 'Low-range co-firing of relevant energy crops' bands. At present only a very small number of generators have claimed ROCs at these bands, and we do not expect ROCs to be claimed at either of these bands after the 2017/18 obligation year. Bioliquids are more expensive than biomass pellets and are already subject to a 4% supplier cap under the RO. The 'low-range co-firing of relevant energy crops' band is only available for electricity generated before 1 April 2019 using energy crops supplied under contracts signed before 7 September 2012.
- 4.12. We therefore consider that the 'Co-firing of regular bioliquid' and 'Low-range co-firing of relevant energy crops' bands do not present a risk to the LCF. On this basis, we propose to exclude generation under these bands from our proposals. Support rates for these bands will remain the same and generation at these bands will not be subject to any cap that might be introduced. However, we will continue to monitor the situation and will consider taking action to control deployment under these bands if evidence suggests such action is required. We welcome views on whether or not excluding these bands from the scope of our proposals could have the unintended consequence of encouraging deployment under these bands.

Proposed revisions to grandfathering policy regarding stations or units benefiting from grandfathering that generate at a lower co-firing band

- 4.13. Our 2015 Government response on changes to grandfathering policy recognised that all plants must, at some time, stop generating for reasons such as routine maintenance or repairs. The document stated that provided that a combustion unit does not submit a ROC claim for generating under a different RO band, it would retain its grandfathered status.
- 4.14. According to the position set out in the 2015 Government response, if a conversion or mid- or high-range co-firing station or unit which benefits from grandfathering used more fossil fuel than intended and submitted a ROC claim under a lower co-firing band, the station or unit would no longer be covered by our grandfathering policy and would be eligible for support under the relevant co-firing band at the date that it moved into that band. If the unit later moved back up into the original mid, high or conversion band, it would become covered by grandfathering policy again, but at the rate which applied as at the date of the move back into that band.
- 4.15. However, following subsequent discussions with generators, it is not clear how Ofgem could withhold the issue of ROCs to an operator who requested this in order to retain its grandfathered status under paragraph 4.13 above. This means that according to the position set out in the 2015 Government response, currently grandfathered units would be affected by any change to present support rates if they dropped down to a lower co-

firing band even for a short period of time, for instance to comply with an emergency instruction from the National Grid.

- 4.16. The proposed cost control measures are aimed at preventing additional unforecast LCF spend by non-grandfathered biomass conversion and co-firing units. It is not our intention that they should affect grandfathered units that occasionally use more fossil fuel than intended and temporarily fall into one of the co-firing bands. Current evidence suggests the likelihood of grandfathered units dropping down the bands is low, and their generation under the co-firing bands does not present a risk to the LCF.
- 4.17. We therefore propose to revise the policy outlined in the 2015 Government Response on changes to grandfathering policy. **If a grandfathered biomass conversion unit falls into one of the co-firing bands in a particular month, it will not be affected by our proposals providing it does not exceed a threshold of 15% fossil fuel averaged across a six month period.** The unit or station will receive the ROC rate currently in place for the relevant co-firing band (see table 3) and will not be subject to any cap that might be introduced. The unit or station will retain the benefit of grandfathered, uncapped support at the current biomass conversion ROC rate of 1.0 ROC/MWh when it returns to operation as a biomass conversion project.
- 4.18. However, sustained variations in biomass levels could have a negative impact on our ability to set the obligation accurately. **We therefore propose that if a biomass conversion unit benefiting from grandfathering were to use more than 15% fossil fuel in any six month period, it would no longer be able to benefit from grandfathering.** Depending on the policy option implemented, it would then be subject either to the support rate in place at the time when it moved down into a co-firing band or to the generator cap. When it returned to operation as a biomass conversion project it would be subject to the support rate in place for conversions at that time or to the generator cap, as applicable.
- 4.19. The threshold of 15% fossil fuel allowed in a six month period should allow for temporary, unintended increases in the proportion of fossil fuel used at a unit or station while encouraging long-term stability across the biomass bands. When assessing whether this threshold has been met, no account will be taken of any fossil fuel used for permitted ancillary purposes.³³

Dedicated biomass plants

- 4.20. The removal of grandfathering in 2015 did not affect plants generating electricity from dedicated biomass with or without CHP. According to the previous position outlined in the 2015 Government Response on changes to grandfathering policy, if a dedicated biomass station that has its support grandfathered used more fossil fuel than intended in a particular month and fell into one of the co-firing bands, the station would receive the ROC rate appropriate to the co-firing band at that time (i.e. it would not benefit from grandfathering of support under the co-firing band). It would retain its grandfathering rights for dedicated biomass when it returned to operation as a dedicated biomass project.

³³ As defined in Part 1 of the Renewables Obligation Order 2015.

- 4.21. However, the proposed cost control measures are aimed at preventing additional unforecast LCF spend by non-grandfathered biomass conversion and co-firing units. It is not our intention that they should affect dedicated biomass stations that occasionally use more fossil fuel than intended and fall into one of the co-firing bands. Such stations tend to be small and we do not currently have evidence to suggest that their occasional generation under the co-firing bands presents a risk to the LCF or the accuracy of setting the Obligation.
- 4.22. Therefore, we now propose to revise the policy outlined in the 2015 Government Response on changes to grandfathering policy. **If a grandfathered dedicated biomass station (with or without CHP) falls into one of the co-firing bands in a particular month, it will not become subject to the proposed 0.1 ROC/MWh rate or the generator cap providing it does not exceed the threshold stated in paragraph 4.7 of 15% fossil fuel across a six month period.** The station will receive grandfathered support at the ROC rate currently in place for the relevant co-firing band (see table 3) and will not be subject to any cap that might be introduced. The station will retain its grandfathered status and benefit from uncapped support at the dedicated biomass ROC rate when it returns to operation as a dedicated biomass project.

Consultation Questions

We would welcome your views on the following questions:

Consultation Questions

Q6	Do you agree with our proposed approach of including only non-grandfathered units or stations in England and Wales operating under the biomass conversion or biomass co-firing bands in the scope of our proposals? Do you think the proposed exceptions, particularly for generation at the 'Co-firing of regular bioliquid' and 'Low-range co-firing of relevant energy crops' bands, could have any unintended consequences? Please give reasons to support your answer.
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Q7	We propose to change the position outlined in the 2015 Government Response on changes to grandfathering policy so that grandfathered stations or units that temporarily drop down the bands are exempted from our proposals. Do you agree with this approach? Are there any other clarifications required to our grandfathering policy? Please give reasons to support your answer.
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Alternative options considered

This chapter outlines alternative cost control mechanisms considered but not pursued and seeks suggestions of other possible options.

- 5.1. One approach would be to do nothing and attempt to rely on the previous withdrawal of grandfathering policy to discourage further deployment of biomass conversion and co-firing. However, evidence of additional deployment of these technologies indicates that the withdrawal of grandfathering is not sufficient to achieve the objective of limiting further LCF spend. Choosing to do nothing could result in additional spend under the RO of around **£110m to £195m per annum** and an increase to average household bills of £1 to £2 per annum from 2018/19 (2011/12 prices). Under the 'highest additional spend' scenario, high deployment of conversion units could result in an increase in RO spend of around £250m per annum from 2018/19 and an increase to average household bills of £3 per annum from 2018/19 (2011/12 prices). In order to have greater certainty that an additional burden will not be placed on consumers, we need to take urgent legislative action to limit further unforecast LCF spend on biomass conversion and co-firing.
- 5.2. One alternative option considered for achieving this objective would be some combination of the generator cap and re-banding of support levels. For instance, a generator cap could be applied to limit the amount of generation for which non-grandfathered biomass conversion or co-firing units can receive ROCs at the current support rates. After a generator's cap has been reached, it could be issued with ROCs at reduced support rates. However, this option would offer less budgetary control than either of the proposed options implemented alone. It would also be complex to introduce and administer.
- 5.3. Another alternative would be to cap the proportion of ROCs from non-grandfathered biomass co-firing and conversion units that suppliers can use to meet their obligations under the RO. However, this would be an indirect way of addressing the issue of higher than forecast generation under the biomass co-firing and conversion bands, and would impose an undesired additional regulatory burden on suppliers. Independent generators might be placed at a disadvantage as they might have to negotiate on discounted terms with a supplier to sell their ROCs.
- 5.4. Another alternative would be to take action to constrain other technologies or schemes under the LCF. However, constraining other technologies under the RO would have little impact as all but a small number of projects remain grandfathered. As biomass co-firing and conversion are transitional technologies, we propose to address the risk of additional deployment of biomass co-firing and conversion directly, through cost control measures for these technologies under the RO.

Consultation Question

We would welcome your views on the following question:

Consultation Question

Q8	Apart from the proposed options of a generator cap or re-banding of support levels, do you have any other suggestions for limiting additional unforecast LCF spend in a way that is fair to generators? Please give as much detail as possible.
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Summary and next steps

In response to the significant risk to the LCF presented by higher than forecast deployment of biomass conversion and co-firing, and in order to protect consumers, we are proposing either:

- Option A: A generator cap of 105,000 ROCs on the annual number of ROCs that can be issued to each biomass conversion or co-firing station in respect of generation at its non-grandfathered units; or
- Option B: A re-banding of support levels to 0.1 ROC/MWh for all non-grandfathered biomass conversion and biomass co-firing projects.

Either option will affect stations and units generating electricity under the biomass conversion or biomass co-firing bands, unless they are eligible for grandfathering. The proposals do not apply to co-firing of bioliquids or low-range co-firing of relevant energy crops (see the 'Scope and proposed exceptions' section for further details).

Careful consideration of all consultation responses and evidence received will help us assess the relative merits of both options and any other options proposed by consultees. We will aim to publish our decision as soon as possible after the consultation closes on 26 October.

Subject to the outcome of this consultation and Parliamentary approval, we intend to implement any decision on changes to the support for biomass conversions and co-firing through legislation, to come into force from 1 April 2018.

Consultation Questions

We would welcome your views on the following questions:

Consultation Questions

Q9	Between Option A (generator cap of 105,000 ROCs per year applied to each biomass conversion or co-firing station in respect of generation at its non-grandfathered units) and Option B (re-banding to 0.1 ROC/MWh for all non-grandfathered biomass conversion and co-firing units), which option do you think is preferable for limiting additional unforecast LCF spend in a way that is fair to generators? Please give reasons to support your answer.
Q10	Do you have any other comments on the subject matter of this consultation?

Catalogue of consultation questions

Consultation Questions

Option A: Generator cap

Q1	<p>Do you agree that the cap on the total number of ROCs that can be issued to each biomass conversion or co-firing station in respect of generation from all its non-grandfathered units should be based on the highest number of ROCs issued to the non-grandfathered units of any affected station in any year prior to 2017/18? This would equate to a cap of 105,000 ROCs a year.</p> <p>If not, how would you recommend setting the level of the cap and why?</p>
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Q2	<p>Do you agree with the proposed approach of pro-rating the level of the generator cap in the event that its introduction is delayed?</p> <p>If not, how would you recommend applying the cap in circumstances where it is introduced after the start of an obligation year and why?</p>
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Q3	<p>What are your views on the likely impacts of the proposed generator cap, particularly on the annual generation and fuel mix of affected generators?</p> <p>Please provide evidence to support your answer.</p>
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Option B: Re-banding of support levels

Q4	<p>Do you agree with the proposed level of support of 0.1 ROC/MWh for all biomass conversion and biomass co-firing bands?</p> <p>Please give reasons and provide evidence to support your answer.</p>
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Q5	<p>What are your views on the likely impacts of the proposed re-banding to 0.1 ROC/MWh for all biomass conversion and biomass co-firing bands, particularly on the annual generation and fuel mix of affected generators?</p> <p>Please provide evidence to support your answer.</p>
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Scope and proposed exceptions

Q6	<p>Do you agree with our proposed approach of including only non-grandfathered units or stations in England and Wales operating under the biomass conversion or biomass co-firing bands in the scope of our proposals? Do you think the proposed exceptions, particularly for generation at the 'Co-firing of regular bioliquid' and 'Low-range co-firing of relevant energy crops' bands, could have any unintended consequences?</p> <p>Please give reasons to support your answer.</p>
Q7	<p>We propose to change the position outlined in the 2015 Government Response on changes to grandfathering policy so that grandfathered stations or units that temporarily drop down the bands are exempted from our proposals. Do you agree with this approach? Are there any other clarifications required to our grandfathering policy?</p> <p>Please give reasons to support your answer.</p>

Alternative options considered

Q8	<p>Apart from the proposed options of a generator cap or re-banding of support levels, do you have any other suggestions for limiting additional unforecast LCF spend in a way that is fair to generators?</p> <p>Please give as much detail as possible.</p>
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Summary and next steps

Q9	<p>Between Option A (generator cap of 105,000 ROCs per year applied to each biomass conversion or co-firing station in respect of generation at its non-grandfathered units) and Option B (re-banding to 0.1 ROC/MWh for all non-grandfathered biomass conversion and co-firing units), which option do you think is preferable for limiting additional unforecast LCF spend in a way that is fair to generators?</p> <p>Please give reasons to support your answer.</p>
Q10	<p>Do you have any other comments on the subject matter of this consultation?</p>

Annex A: Coal power stations in Great Britain (as at May 2017)³⁴

Company name	Station	Installed capacity (MW)	Commissioned	Location	Capacity Market participation date
RWE Npower Plc	Aberthaw B	1,586	1971	Wales	2017/18
EDF Energy	Cottam	2,008	1969	East Midlands	2017/18
Drax Power Ltd	Drax (coal units)	1,980	1974	Yorkshire	2017/18 (2 units)
Eggborough Power Ltd	Eggborough	1,960	1967	Yorkshire	2017/18
Scottish and Southern Energy	Fiddler's Ferry	1,961	1971	North West	2017/18 (3 out of 4 units)
Uniper	Ratcliffe	2,000	1968	East Midlands	2017/18 (2 out of 4 units) 2018/19 (4 out of 4 units)
SIMEC	Uskmouth	230	1966	Wales	N/A
EDF Energy	West Burton	2,012	1967	East Midlands	2017/18

³⁴ Based on table 5.11, Digest of UK Energy Statistics, BEIS, July 2017:
<https://www.gov.uk/government/statistics/digest-of-uk-energy-statistics-dukes-2017-main-report>

