

**DEPARTMENT OF ENERGY
AND CLIMATE CHANGE**

**REFORM OF THE
RENEWABLES OBLIGATION**

Government Response to
the Statutory Consultation on
the Renewables Obligation
Order 2009

DECEMBER 2008

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CONTENTS

	Page
Foreword by Mike O'Brien QC MP, Minister of State	3
Chapter 1 – Introduction	5
 <u>Section 1: Principles of Banding</u>	
Chapter 2 – Principles of Banding	9
Chapter 3 - Grandfathering	17
Chapter 4 – Co-Firing	23
Chapter 5 - Good Quality Combined Heat and Power (GQCHP)	26
 <u>Section 2: Operating the Banding Regime</u>	
Chapter 6 - Calculating the Obligation	27
Chapter 7 - Banding Reviews	33
 <u>Section 3: Biomass and Waste Issues</u>	
Chapter 8 - Sustainability Reporting	37
Chapter 9 - Determining the Renewable Content of Biomass, Waste and Fuels produced through Advanced Conversion Technologies (ACTs), (Anaerobic Digestion, Gasification and Pyrolysis)	42
Chapter 10 - Mixed Fuel Scenarios	46
Chapter 11 - Solid Recovered Fuel (SRF)	52
 <u>Section 4: Technical and Administrative Changes</u>	
Chapter 12 - Funding Ofgem's Administration	53
Chapter 13 - Late Payments Fund	55
Chapter 14 - Private Wire	56
Chapter 15 – Microgeneration (50kw and Under) – Simplification of Administration	58
Chapter 16 – Changing Metering Requirements in Article 16(9a)	61
 <u>Annexes</u>	
Annex A – Respondents	62
Annex B – Glossary of Terms	64
Annex C - Sustainability Reporting – List of Environmental Quality Assurance Schemes	65
Annex D – Gasification and Pyrolysis Definitions	66
Annex E: Analysis on Deeming the Fossil Fuel Fraction of Waste	69

Foreword by Mike O'Brien QC MP, Minister of State



The Government is committed to tackling the unprecedented challenges we face to our environment, our economy, and the future security of our energy supplies. This is a commitment to action not just to words.

We have created the Department of Energy and Climate Change to provide a strong focus on these challenges, reflecting the fact that climate change and energy policies are inextricably linked, with two thirds of our emissions coming from the energy we use. It has also delivered the Energy Act 2008 and the Climate Change Act 2008 which, along with the Planning Act 2008, provide the powers necessary to drive forward work on these challenges.

Increasing the amount of electricity we generate from renewable sources will be an extremely important part of our work in tackling these challenges. We are strong supporters of the EU proposal to achieve 20% of all the EU's energy needs from renewables by 2020 and are developing a strategy that will set out how we intend to meet our share of the target. The electricity sector will have to be a major contributor to that strategy.

The Renewables Obligation has set us on the way with six gigawatts of renewable generation installed and a further 18 gigawatts in the pipeline. We need it to accomplish more and to give the investment community the greater confidence and certainty it needs to plan ahead.

That is why we confirmed in the Pre-Budget Report that the Renewables Obligation will continue to be the UK's support scheme for large-scale renewable electricity generation and announced its extension from the current end date of 2027 to at least 2037.

It is also why we are improving the efficiency and effectiveness of the RO. We have taken necessary powers in the Energy Act 2008 to deliver this, in particular to band the Renewables Obligation to allow it to bring on the wider range of technologies (such as offshore wind and biomass) that we need and to be more cost-effective. I am, therefore, pleased to publish today the Government Response to the statutory consultation with a copy of our draft Renewables Obligation Order, which sets out the detail of how we will use these powers.

I would like to thank all of those respondents who have helped us to reach this point with their comments and evidence, and look forward to their continuing involvement going forward.

A handwritten signature in black ink that reads "Mike O'Brien". The signature is written in a cursive style with a prominent loop at the end of the name.

Mike O'Brien QC MP
Minister of State

Chapter 1 – Introduction

Summary of key points in Chapter 1

- Renewables Obligation (RO) will need to work in association with proposed new subsidy mechanisms, e.g. Feed-in Tariffs and Renewable Heat Incentive.
- Scotland's Renewables Obligation (ROS) statutory consultation closes 12th December 2008.
- Northern Ireland Renewables Obligation (NIRO) statutory consultation closes 15th December 2008.
- Table sets out expected timetable to implementation.

1.1 The Renewables Obligation (RO) is critical to the success of renewables in the UK; it is therefore essential that any changes to how the RO is operated are carefully developed. Banding the RO is a fundamental change that removes the previous link between the amount of electricity that is generated and the number of Renewables Obligation Certificates (ROCs) received per Megawatt Hour (MWh). This is necessary to ensure that early stage technologies, which will now receive more than 1 ROC/MWh (termed “banding up”), are able to enter the marketplace. We have, therefore, carried out three consultation exercises on banding of the RO to date. This response sets out Government's decisions on the technical issues set out in the final statutory consultation¹.

Responses to the statutory consultation

1.2 We received 112 responses from generators; suppliers; trade associations; non-energy concerns and individuals. A full list of respondents can be found at Annex A, and all responses – except those submitted in confidence – can be found at: www.tinyurl.com/6r9r3v. We would like to thank all those who responded to the consultation.

1.3 69 of the responses were from companies, including generators; suppliers; supply chain companies and consultancies. 29 were from organisations, including trade associations for renewables and related industries; community energy groups and development agencies; and other groups. The remainder were from individuals representing micro-hydro interests.

1.4 The Pre-Budget Report (published 24th November 2008) confirmed that the RO remains the Government's main mechanism for incentivising large-scale renewable electricity generation in the UK. It is also an important part of the Government's programme for securing reductions in carbon dioxide emissions, working in support of other policy measures such as the EU Emissions Trading System, and with future mechanisms such as a Feed-in Tariff and Renewable Heat Incentive.

1.5 The RO requires electricity suppliers to source an increasing proportion of their electricity from renewable sources, or pay a specified buy-out price. Since

¹ More details of these consultations can be found at www.tinyurl.com/65gd3s

introduction in 2002 it has led to the proportion of electricity sales attributable to eligible renewables in the UK tripling (from 1.5% in 2001 before the RO was introduced to 4.9% in 2007). A further 700 MW has already been installed this year and there is up to 18 GW in the pipeline.

1.6 Nevertheless there is scope to make the RO more efficient and effective. The 2007 Energy White Paper therefore announced the Government's proposal on future reform of the RO for England and Wales.

1.7 The Government Response on Reform of the Renewables Obligation published 10th January 2008², set out our decisions on introducing banding of the RO, following the responses we received to the consultation published on 23rd May 2007 alongside the Energy White Paper³. A reformed RO is expected to be some 30% more effective in delivering new generation over the next few years than the RO would be in its current form.

Renewables Energy Strategy

1.8 Banding the RO is a significant step towards achieving Government targets on renewables generation, and the reforms outlined here set the framework for Government support for large scale renewables generation going forward. The Government's Renewable Energy Strategy due in spring 2009 will further develop this framework, and we have already announced our intention to extend the RO from its current end date of 2027 to at least 2037. We believe that this early decision to extend the RO alongside the banding of RO should give the investment community the greater confidence and certainty it needs to plan ahead.

1.9 In future the RO will have to operate alongside other Government mechanisms to support renewables energy, including a feed-in tariff and Renewable Heat Incentive for which we have taken powers in the Energy Act 2008. We have, therefore, decided not to introduce any changes to our support of small generators which would make the introduction of a feed-in tariff more complex. Similarly, we have assumed that the treatment of CHP stations will need to change when a Renewable Heat Incentive comes into effect – though we expect to apply the principle of grandfathering so that the level of support under the RO for stations built (or subject of major investments) will be retained.

Devolution

1.10 Whilst we refer in this document to the 'Renewables Obligation', in practice the system works on the basis of three complementary Obligations: one covering England and Wales, and one each for Scotland and Northern Ireland. Decisions regarding the operation of the Obligations in Scotland and Northern Ireland are for the Scottish Government and the Northern Ireland Executive respectively. However, the UK Government and the Devolved Administrations understand the benefits of a consistent approach and the importance of this to many within the industry. Indeed,

² www.berr.gov.uk/files/file43545.pdf

³ www.berr.gov.uk/files/file39497.pdf

the need for such consistency was echoed again by respondents to the statutory consultation, as in previous exercises.

1.11 Both the Scottish Executive and Northern Ireland are currently in the process of carrying out their own respective consultations with stakeholders before finalising their policy. These consultations are due to close on 12th and 15th December 2008 respectively, and responses to each will follow.

Structure of ROO and changes

1.12 The introduction of banding has resulted in a number of substantive changes to how the ROO operates in order to give effect to our proposals. The draft ROO is for reference only and is a working draft that does not currently reflect all policy intentions detailed in this document. The disparities have been highlighted within the relevant chapters for clarity.

Timing to implementation

1.13 Due to the importance of the RO to the renewables electricity market it has been very important to ensure any changes are carefully developed. Banding introduces some significant changes to the structure and operation of the RO, and it has been important that these are carefully considered. We have, therefore, carried out three consultation exercises to reach this point.

1.14 The first consultation was launched in October 2006 and considered the general principles of banding and how they might work; this was followed in May 2007 by a second which set out more specific proposals on how a banded RO should work.

1.15 The response to the May 2007 consultation was published alongside the introduction of the Energy Bill into Parliament on 10th January 2008. The Energy Bill provides the powers necessary to introduce banding. The Energy Act 2008 received Royal Assent on 26th November 2008; it is a significant step along the critical path towards delivering banding.

1.16 This response sets out Government's decisions on the technical issues set out in the statutory consultation published on 26th June 2008. More details of these consultations can be found at www.tinyurl.com/65gd3s.

1.17 The next steps towards implementation of banding are:

Consultation events	December 2008/January 2009
Scotland (ROS) statutory consultation closes	12 th December 2008
Northern Ireland (NIRO) statutory consultation closes	15 th December 2008
Ofgem consultations on GB Supplier and Large Generator Guidance published	December 2008

Issue Revised ROO (following comments from stakeholders)	January 2009
Ofgem consultation of Fuel Measurement Guidance published	January 2009
Scottish ROO and Northern Ireland RO laid	January/February 2009
England & Wales ROO laid	January/February 2009
State Aid Clearance	February 2009
Debates in Houses of Parliament on England & Wales ROO	February/March 2009
RO Implementation date	1 st April 2009

Summary of Bands

The table below summarises the ROC value of each technology type. An extended version, including the definitions for each type, is available on the BERR website here: www.tinyurl.com/64cuq9.

#	Generation type	ROCs/MWh	MWh/ROC
1	Hydro-electric	1	1
2	Onshore Wind	1	1
3	Offshore Wind	1.5	2/3
4	Wave	2	1/2
5	Tidal Stream	2	1/2
6	Tidal Impoundment – Tidal Barrage	2	1/2
7	Tidal Impoundment - Tidal Lagoon	2	1/2
8	Solar Photovoltaic	2	1/2
9	Geothermal	2	1/2
10	Geopressure	1	1
11	Landfill Gas	0.25	4
12	Sewage Gas	0.5	2
13	Energy from Waste with CHP	1	1
14	Pre-banded gasification	1	1
15	Pre-banded pyrolysis	1	1
16	Standard gasification	1	1
17	Standard pyrolysis	1	1
18	Advanced gasification	2	1/2
19	Advanced pyrolysis	2	1/2
20	Anaerobic Digestion	2	1/2
21	Co-firing of Biomass	0.5	2
22	Co-firing of Energy Crops	1	1
23	Co-firing of Biomass with CHP	1	1
24	Co-firing of Energy Crop with CHP	1.5	2/3
25	Dedicated Biomass	1.5	2/3
26	Dedicated Energy Crops	2	1/2
27	Dedicated Biomass with CHP	2	1/2
28	Dedicated Energy Crops with CHP	2	1/2

SECTION 1: PRINCIPLES OF BANDING

Chapter 2 – Principles of Banding

Summary of key points in Chapter 2

- Small changes have been made to the definitions for hydroelectric, offshore wind and wave / tidal stream. Gasification has received a more substantial alteration.
- All microgenerators (50 kW and under) already accredited under the RO including sewage and landfill gas will receive 2 ROCs/MWh of generation regardless of their date of accreditation.
- Hydro stations above 50 kW will receive 1 ROC/MWh.
- Any station which downgrades its capacity to 50 kW or below on or after the introduction of a banded RO will remain in the band that it would have been allocated to if it had not reduced its capacity.
- The Pre-Budget Report on 24th November 2008 announced the extension of the RO until at least 2037. We will ensure that individual projects built between now and 2020 can benefit under the scheme for at least 17 years. Details will be announced in the Renewable Energy Strategy consultation response in spring 2009.
- Government will consider the case for extending eligibility under the RO to generating stations outside the UK in the light of the Renewable Energy Directive, when published.

2.1 The RO is currently technology neutral. Eligible renewable generators receive 1 ROC/MWh of renewable electricity generated. To date the RO has been successful in bringing forward the more economic technologies such as co-firing, landfill gas, sewage gas and onshore wind, but has proved less successful in bringing forward those technologies that are less well-developed in the market and currently face higher costs of generation. Due to constraints on the amount of generation available from the most economic renewable generation technologies, we need to bring forward the less established technologies in order to meet our long-term targets for renewable energy.

2.2 The Government's objective is to increase the support provided by the RO to less established, higher risk technologies whose costs are greater by awarding them more than 1 ROC/MWh of generation ("banding up"). In order to maintain value for money for the consumer and to prevent cheaper renewables generation technologies being over-compensated we are correspondingly reducing the support ("banding down") for those renewables technologies which are relatively mature or low risk (i.e. they require low levels of capital investment or have other income streams to support their business case).

2.3 These changes, subject to the grandfathering and transitional arrangements set out in Chapter 3, will apply to electricity generated by any station which has been accredited after the announcement of the Government's intention to introduce a banded RO set out in the Energy Review which was published on 11th July 2006.

2.4 The introduction of a banded RO will break the existing direct link between the level of the Obligation and the actual amount of renewable energy required to meet it. One ROC will not necessarily be equivalent to 1 MWh of renewable electricity. This means that the RO will need to change from an obligation to produce evidence that a proportion of electricity supplied to customers comes from renewable sources, to one where suppliers are obliged to present a specified number of ROCs.

2.5 In future, electricity suppliers may meet their obligation by supplying either more or less actual renewable electricity than is currently the case. For example, under a banded RO, a supplier with an obligation to present 5,700,000 ROCs to Ofgem could potentially meet that obligation either using renewable energy sources that attracted multiple ROCs (i.e. for which a ROC will represent less than 1 MWh of electricity – e.g. a wave power ROC will represent 0.5 MWh) or mainly through renewable energy sources awarded fractional ROCs (i.e. for which a ROC will represent more than 1 MWh of electricity – e.g. a landfill gas ROC will represent 4 MWh). In the first case, the electricity supplier would be supplying less actual renewable electricity than under the current RO but with high proportions coming from the more expensive and developing renewable technologies. In the second, the supplier would be supplying more actual renewable electricity than under the current RO, but from more established and economic technologies.

2.6 That said, the banding levels have been set with consideration of the volumes of ROCs coming forward from each technology so that there is limited disruption in the number of ROCs being issued, compared to a situation where 1 ROC/MWh is issued. The Government has carried out modelling work which anticipates that, when averaged across the period up to the next review of the banding regime in 2013, 1 MWh of renewable electricity will receive 1 ROC. This point is covered in Chapter 6 on Calculating the Obligation.

2.7 It should, however, be made clear that although the RO is being changed from an obligation to produce evidence that a certain amount of renewable electricity has been supplied, to an obligation to present a certain number of ROCs, the information contained in a ROC and what a ROC certifies will remain unchanged. It will still certify that the amount of renewable electricity stated in the ROC has been generated for supply to customers in GB or Northern Ireland by a licensed electricity supplier or has been used in a permitted way.

2.8 The statutory consultation asked respondents to consider the definitions of all types of electricity generation that are eligible under the RO. Clear definitions are necessary as we move to a banded RO where different levels of support are provided to different types of electricity generation. A minority of respondents suggested changes to one or more of the definitions. The definitions are found in Part 4 and 5 of Schedule 2 of the draft ROO and interpretation is specified in Article 2. The key changes which we propose in response to these comments are set out below.

Hydroelectric

2.9 A minor amendment to the definition of a hydro generating station will be included to clarify that all electricity has to be generated by water and turbines (which include Archimedes screws).

Offshore Wind

2.10 Based on representations from the responses to the statutory consultation, Government plans to alter the proposed wording to clarify the definition of offshore wind. The policy intention is to ensure that for a station to count as offshore wind, all turbines need to be located in offshore waters, but there is provision to allow aspects of the generating station, such as the substation, to be built on land

Tidal Impoundment (Tidal Barrage)

2.11 Two issues were raised regarding tidal impoundments; a small number of respondents questioned the 1 GW upper limit in the proposed definition which restricts generating stations greater than 1 GW in declared net capacity (DNC) from being eligible for ROC support. We have considered this option but believe that the upper limit *is* necessary to ensure that the RO does not become dominated by one type of technology, thereby restricting support to other renewable technologies. One respondent also questioned how new large tidal barrage systems will be classified. Ofgem will consider new systems on a case by case basis.

Wave / Tidal Stream

2.12 Respondents expressed concerns with the proposed definition, namely that it is limited to electricity generated from the motion of waves and currents on the sea. Several respondents felt that such wording may indirectly restrict deployment of wave and tidal generating installations in viable locations such as estuaries and inland waters. We propose to clarify the definition to ensure that such ambiguities are removed, by removing any reference to sea and replacing the text with “from the motion of naturally occurring waves on water” or “tidal currents in water”.

Gasification/Pyrolysis

2.13 In the statutory consultation we set out our proposals for a revised definition of gasification/pyrolysis to replace the current definition of ACT. The definition reflects our policy intent to provide gasification/pyrolysis (along with anaerobic digestion) with an increased level of support (2 ROCs/MWh) where it presents potential advantages in efficiency for using biomass and waste over standard incineration⁴.

2.14 Given our policy intent, the definition of gasification/pyrolysis needs to ensure that it can be clearly differentiated from standard incineration. The revised definition, was based on a report commissioned by us from AEA Technology⁵ and included in

⁴ Advanced conversion technologies paragraph, page 19, Reform of the Renewables Obligation Consultation Document, May 2007, www.berr.gov.uk/files/file39497.pdf

⁵ Renewables Obligation: Defining the different types of electricity generation using biomass and waste, June 2008, www.berr.gov.uk/files/file46839.pdf

the statutory consultation, took both these objectives into consideration in setting a minimum gross calorific value for the gas produced allowing it to be used effectively in an independent generator.

2.15 The majority of respondents on this topic agreed with the need to differentiate between gasification/pyrolysis and standard incineration. However, some felt that the threshold proposed in the new definition was too high and would not only exclude incineration but also gasification/pyrolysis generating stations that produce syngas of a lower calorific value, but are currently supported by the RO.

2.16 Those affected argued that such a change would remove support for technologies in which they have invested in expectation of ROC support and could encourage wasteful processing of feedstock simply to meet the qualifying criteria. Following further analysis of the efficiencies of various incineration, gasification and pyrolysis technologies we remain of the view that gasification/pyrolysis which does not meet the minimum threshold is likely to have little or no efficiency gains over incineration.

2.17 However, we understand that investor confidence is critical - especially in the current financial situation - and we have therefore decided to introduce two definitions for gasification and pyrolysis, in addition to the pre banded (ACT) definition. The first ("advanced gasification/pyrolysis") will reflect the recommendations of the AEA report that technologies receiving 2 ROCs/MWh will need to demonstrate that the syngas at the inlet to the generating station when measured at 25 Celsius and 0.1 megapascals has a gross calorific value of at least 4 megajoules per cubic metre. The second ("standard gasification/pyrolysis") will mean that those that have already invested in gasification/pyrolysis technologies that produce syngas of a lower calorific value will receive support of 1 ROC/MWh where they can demonstrate that the syngas at the inlet to the generating station has a gross calorific value of at least 2 megajoules per cubic metre when measured at 25 degrees Celsius and 0.1 megapascals. No ROCs will be granted for electricity generated from fuel that does not meet the requirements of the "Standard" or "Advanced" gasification or pyrolysis bands, unless the generating station meets the accreditation deadlines for the "Pre-banded Gasification/Pyrolysis" bands.

2.18 We will, continue with our intention to phase out the current definition of ACTs. However, stations which have been accredited under this definition, now called Pre-banded Gasification/Pyrolysis, or have achieved preliminary accreditation by 31st March 2009 and full accreditation by 31st March 2011, will continue to receive 1 ROC/MWh. No ROCs will be awarded for electricity which is produced by a generating station which does not meet the above accreditation deadlines. The ROO includes drafts of the new definitions of the "Advanced", "Standard" and "Pre-banded" gasification and pyrolysis bands. The draft ROO will be further amended to provide that ROCs will not be issued in respect of electricity produced from gasified or pyrolysed fuels which does not qualify for any of these bands.

Anaerobic Digestion of Sewage Sludge (Sewage Gas).

2.19 We have previously re-examined the level of reward for renewable generation from sewage gas under the RO and increased its proposed band from 0.25 to 0.5 ROCs. Further evidence was provided by Water UK on the costs of adding new and advanced anaerobic digestion or upgrading existing anaerobic digestion to sewage gas installations to generate extra electricity. A number of water companies have said it is this type of investment that most water companies would consider making in future. Water companies assert that costs are comparable with other anaerobic digestion plants as many of these new digesters are able to take mixed fuel feeds. They also provided analysis indicating that the marginal costs for installing anaerobic digestion at existing sewage gas plants are even higher than for new build.

2.20 It seems that the anaerobic digestion of sewage covers a range of technologies from the adaptation of existing digesters to produce power to the construction of new and technologies designed to extract the maximum possible methane from the feedstock. These technologies obviously cover a range of costs. On balance it does not seem that the high cost for the comparatively small amounts of additional electricity produced by the most advanced anaerobic digestion of sewage sludge is cost effective compared to the more basic forms. Where sewage gas plants choose to install new anaerobic digesters at existing plants capable of taking mixed feeds, the 2 ROC band will apply to non sewage biomass or waste burned that meets the eligibility criteria. Therefore Government is not convinced of the necessity to move sewage gas to a higher band. Sewage gas will therefore receive 0.5 ROCs/MWh

Anaerobic Digestion

2.21 A limited number of comments, all from the Water Sector, were received on the definition of anaerobic digestion. These have been covered in the discussion of sewage gas (above). We do not propose to alter the definition of anaerobic digestion, however, we do understand the need for clarity regarding the anaerobic digestion of mixed fuel streams and how ROCs will be awarded. This topic is discussed in detail in Chapter 10.

Co-firing

2.22 In the statutory consultation, we set out a definition for a type of electricity generation called “Co-firing of biomass with CHP” to cover where biomass is used in a separate combustion unit to fossil fuel in a single Good Quality CHP (GQCHP) station. This definition was proposed in recognition of the plans by some large industrial users of energy to build additional biomass combustion units alongside existing fossil fuel generation and the increased thermal efficiency of such GQCHP plants.

2.23 The majority of responses to the statutory consultation were in favour of the principle of differentiating between co-firing in good quality CHP stations and regular co-firing but some respondents thought that the definition should not rely on the requirement to use separate combustion units and have argued that this distinction offers the perverse incentive to unnecessarily invest in new plant when existing plant

could be utilised. However, a configuration where the biomass is used in the same boiler seems to be most similar to co-firing biomass in an existing fossil fuel power station with the costs relating to the procurement of biomass fuels and a requirement for minimal additional capital investment. For these reasons, and in the absence of clear evidence of necessary additional costs, we intend to retain the proposed distinction.

2.24 Some respondents also asked for clarification over what would be treated as “dedicated biomass” where new biomass generation was used on an existing fossil fuel site, and have asked whether it is possible to introduce a definition of a “generating station” in the ROO. We are not minded to introduce such a definition as this would seem to restrict flexibility and could potentially block deployment given the wide range of configurations in existence and that could be developed in the future.

2.25 Further discussion of co-firing is to be found in Chapter 4. We would urge developers seeking classification of a particular configuration of a generating station to engage in early discussions with Ofgem. Ofgem will only be able to provide preliminary accreditation which specifies the technology type for new configurations that are provided for in the ROO 2009 from April 2009. Once the ROO is implemented on 1st April 2009 those stations which meet the requirements will be accredited and start receiving banded ROCs.

Microgenerators

2.26 The statutory consultation proposed that microgenerators (50 kW and under) should receive 2 ROCs/MWh. The purpose of this is, firstly, to minimise complexity for microgenerators, agents and Ofgem, particularly for microgenerators using two or more types of technology. Secondly, to reflect that the capital costs of small generation technologies are, typically, significantly higher per MWh than for larger-scale renewable technologies.

2.27 However, there is a possibility that by providing all microgenerators with 2 ROCs this introduces some perverse incentives for stations who already have installed capacity above the 50 kW threshold, or who could install a station with capacity above this threshold, to reduce their capacity to benefit from 2 ROCs/MWh of generation. The statutory consultation considered this issue.

2.28 Firstly, in the case of small landfill and sewage gas the statutory consultation sought views on whether placing these technologies in the 2 ROC band alongside other micro generation technologies would over reward these technologies and possibly create a perverse incentive to install sub-optimal plant. In the interests of avoiding complexity, the majority of responses felt that small sewage and landfill gas should receive 2 ROCs along with all other micro generation technologies. The Government agrees with this position and will place all sewage gas and landfill gas stations of 50 kW and under in the 2 ROC band.

2.29 Secondly, the statutory consultation considered whether the 2 ROC band for microgeneration created an incentive for small hydro stations to install equipment at a capacity of 50 kW or less so that they could benefit from the higher ROC reward. In this case the statutory consultation sought views on whether hydro stations up to

75 kW should receive 2 ROCs on generation from the first 50 kW of capacity and then 1 ROC on the generation from the capacity beyond that threshold. This would better reflect the economics of these projects.

2.30 The majority of responses agreed that there was an incentive for hydro generators near to the 50 kW threshold to install equipment with a capacity below 50 kW in order to benefit from 2 ROCs/MWh. However, there was not universal agreement on how to address the issue. Some responses suggested that it would not be appropriate to make a specific exception for small hydro and to avoid complexity hydro stations should be treated in the same way as all other technologies.

2.31 The Government recognises the concerns expressed about the economics of small hydro and that this may lead to a small number of stations installing sub-50 kW equipment to benefit from 2 ROCs/MWh. However, the additional complexity of making an exception for a small category of generators needs to be balanced against the wider aims of the RO and the need to maintain simplicity as far as possible. In addition, since the publication of the statutory consultation in June the Government has made provision in the Energy Bill for the introduction of a feed-in tariff for generators up to a maximum of 5 MW in capacity (the details of the operation of the feed-in tariff including limits for each technology will be the subject of a consultation next summer). In light of this, Government is not minded to increase the complexity of a banded RO by making exceptions to the banding levels where only small numbers of generators will be affected. Hydro schemes of 50 kW and below will therefore receive 2 ROCs/MWh and schemes above this level will receive 1 ROC/MWh.

2.32 Thirdly, in looking at the statutory consultation responses on the issue of perverse incentives created by placing all microgenerators in the 2 ROC band the Government has also considered the risk that some existing stations who fall near to the 50 kW threshold may decide to downgrade their capacity to 50 kW or below so that they can benefit from the 2 ROC support level.

2.33 It would not be good value for money for consumers to allow existing plant which is currently economic under the RO to game the system in this way. Therefore, any station which reduces its capacity to 50 kW or below, on or after the date of introduction of a banded RO, will not be able to benefit from the 2 ROC banding support for microgeneration. These stations would remain in the band which would be applicable to their station had they not reduced their capacity. Any stations which did reduce their capacity to 50 kW would, however, still be able to benefit from the other rules which apply to microgenerators such as having the option to make monthly or annual ROC claims, and the option to use an agent.

Pre-Budget Report Announcement on Extension of RO and Duration of Support

2.34 The Pre-Budget Report on 24th November 2008 confirmed the Government's intention to retain the RO as the support scheme for large-scale renewable electricity generation and announced a significant extension of the RO from the current end date of 2027 to "at least 2037".

2.35 It is important to note that the extension to 2037 does not mean that we intend to provide an additional ten years of support to all *existing* projects. In the Government's May 2007 consultation we explored issues around limiting the duration of support under the RO. While we decided not to pursue these proposals at the time, respondents recognised the principle being espoused. Further work is needed to determine exactly what duration of support is appropriate, but it will be at least 17 years. An announcement will be made in the final Renewable Energy Strategy next year.

2.36 It is, however, still our intention that existing projects will continue to be supported under the RO until 2027.

Extending RO to Offshore Wind or Marine Generation Outside UK Waters.

2.37 Given the likely expansion in the generation of electricity in offshore waters, both from wind and marine technologies, we invited views on whether to open up the RO to allow renewable electricity generated from these technologies outside the UK and its waters to be eligible under the RO. Respondents to the statutory consultation broadly agreed with this proposal.

2.38 Negotiations on the Renewable Energy Directive have continued since the publication of that consultation. We will need to decide on the case for extending the RO to non-UK generation in the light of the final Renewable Energy Directive. Given that the EU Directive is unlikely to be finalised before we begin the Parliamentary process for the 2009 ROO, we do not propose to make any changes in this Order.

Chapter 3 - Grandfathering

Summary of key points in Chapter 3

- Co-fired stations without CHP will not be grandfathered.
- Microgenerating stations (50kW and under) will not be grandfathered but support at 2 ROCs/MWh will be maintained following the next Review in 2013.
- Biomass and waste plants will not be grandfathered. They will receive the same band as new plants of the same description. There is an expectation that future banding decisions will move towards banding down as technology costs decrease and biomass supply chains mature.
- Stations in receipt of a grant will be expected to repay this in order to be eligible for higher ROC support.

Process and detail

3.1 The aim of the grandfathering and transitional banding arrangements is to protect investment decisions made on information available at the time. Details of how these work for particular types of generation are set out below. The banding levels which will apply to different technologies can be found in Schedules 1-3 of the ROO.

3.2 Grandfathering applies to the electricity generated by the total installed capacity of a generating station that has been accredited by Ofgem by a relevant date. The relevant date will be determined by the type of generator and whether it is an existing station, a new station or additional capacity added to an existing station. In most cases stations in existence when the proposal to introduce banding was announced (11th July 2006) will be entitled to the same number of ROCs they received on accreditation until 2027, and will be grandfathered at 1 ROC/MWh. New stations which have been accredited since the announcement of banding proposals but before a certain date will be allowed to band up, or if they are a technology being banded down will be grandfathered at 1 ROC/MWh. The same principle will be extended to additional capacity (other than co-firing without CHP).

3.3 In situations where accredited generating stations reduce their total installed generating capacity prior to April 2011, the original capacity will be grandfathered, and no change in ROC entitlement will occur. So, for example, if after 1st April 2009 a landfill gas generating station replaces a 2 MW engine with a 1 MW engine there is no additional capacity and the generation will continue to receive 1 ROC/MWh even though the configuration of the plant and the physical assets may have changed.

3.4 We intend to leave it to generators' discretion as to whether they either meter any additional capacity added after the dates which qualify a generating station for grandfathering, or allow Ofgem to calculate their ROC entitlement on the basis of a fraction *pro rata* to the total installed capacities of the plant at the relevant dates. If the generator decides to meter grandfathered and non-grandfathered capacities separately, Ofgem will net off input electricity by determining the

proportion of the total output of generation due to the old (grandfathered) capacity and the newly installed capacity. Where the generator chooses to allow Ofgem to calculate their ROC entitlement on the basis of a fraction *pro rata* to the total installed capacity then the input electricity will be netted off the total output from the generating station and ROCs proportioned between the grandfathered and non-grandfathered capacity accordingly.

3.5 Our intention is that the principles of grandfathering based on an entitlement to ROCs received at accreditation will be followed for subsequent reviews of banding and that consequently generating stations which have been accredited on or before the announcement of any subsequent review, will have the electricity generated from that capacity grandfathered at the band they were placed in when they received full accreditation. For example, an offshore wind generating station in receipt of 1.5 ROCs/MWh would continue to receive this level of support until (at least) 2027, even if a subsequent review reduced the level of support for new stations of this type.

Non-Biomass Stations

3.6 For existing non-biomass stations over 50 kW total installed capacity (i.e. onshore wind, offshore wind, wave and tidal, hydro, solar photovoltaic, geothermal and geopressure plants), grandfathering – subject to the provisions on grants – will work as follows:

3.7 Electricity generated by generating stations which had full accreditation on or before the date of the publication of the Energy Review Report (11th July 2006) will be grandfathered at 1 ROC/MWh only.

3.8 Electricity generated by generating stations which are granted full accreditation after 11th July 2006 but on or before 31st March 2009 and which, after the introduction of banding, would be banded up, will move to the appropriate higher band once they are introduced on 1st April 2009.

3.9 Generating stations which had full accreditation by 11th July 2006 and commission additional capacity after 11th July 2006 but on or before 31st March 2011 – and receive accreditation for the additional capacity on or before 31st March 2011 – will receive ROCs for electricity generated from this additional capacity at the appropriate banding level. As with any change to the generating station, the additional capacity should be notified to Ofgem once it has been commissioned.

Landfill Gas and Sewage Gas

3.10 Electricity generated from landfill and sewage gas stations is being banded down:

3.11 Electricity generated from landfill and sewage gas in generating stations which have full accreditation as at 1st April 2009 will be grandfathered at 1 ROC/MWh.

3.12 Electricity generated by generating stations which are granted preliminary accreditation before 1st April 2009 and receive full accreditation on or before 31st March 2011 will be grandfathered at 1 ROC/MWh.

3.13 For accredited generating stations which commission additional capacity after 11th July 2006 but before 1st April 2011, electricity generated by the additional capacity will be grandfathered at 1 ROC/MWh. As with any change to the generating station, the additional capacity should be notified to Ofgem once it has become operational. Electricity generated by any capacity which is commissioned on or after 1st April 2011 will receive the band as if new capacity, e.g. sewage gas stations will receive 0.5 ROCs/MWh and landfill gas 0.25 ROCs/MWh.

3.14 For example, a landfill gas station that started operating on 1st January 2006, and as part of its accreditation under Article 31 of the ROO notified Ofgem that it had a total installed generating capacity of 2 MW, will have been entitled to 1 ROC/MWh for this installed capacity. As this capacity was notified to Ofgem on or before 11th July 2006 (the date of the Energy Review Report and the relevant date in this instance) this 2 MW of capacity will be “grandfathered” and will be eligible to remain on 1 ROC/MWh even though landfill gas generating stations are to be banded down to 0.25 ROCs/MWh.

3.15 After 1st April 2006 but before 1st April 2011 an additional landfill gas engine is added to the generating station which increases the total installed generating capacity from 2 to 2.5 MW. As this additional 0.5 MW of capacity gains accreditation before 1st April 2011, electricity generated by it will be grandfathered at 1 ROC/MWh.

3.16 On or after 1st April 2011 another landfill gas engine is added to the generating station which increases its installed generating capacity from 2.5 to 3 MW. This additional 0.5 MW of capacity becomes operational after 1st April 2011 and the electricity it generates will therefore not be grandfathered i.e. it will only be eligible for 0.25 ROCs/MWh.

Co-fired generating stations without CHP

3.17 Electricity from co-fired generation stations without CHP will not be grandfathered.

3.18 As this generating technology requires relatively little capital investment compared to other renewables technologies, the Government’s view is that it would not be appropriate to grandfather electricity produced by co-fired generating stations without CHP.

3.19 The level of banding for co-fired generating stations without CHP set out, or subsequently determined as part of a review, will apply to all co-fired generating stations irrespective of whether or not they are already operational.

Microgenerating stations

3.20 Electricity generated by generating stations with a DNC of 50 kW or less will receive 2 ROCs/MWh regardless of when the installation was accredited. However,

there will be no grandfathering rights for microgenerators which means that if in subsequent reviews their support level is changed then they will all be moved to the new band. This reduces complexity for microgenerators and the 2 ROCs/MWh provides a higher level of incentive than under the current RO. The Government intends to maintain the new level of support following the first banding review, expected in 2013, subject to decisions on feed-in tariffs.

3.21 There is one exception in the treatment of microgenerators and this is for stations which reduce their capacity to 50 kW or below on or after the date of introduction of a banded RO. These stations would remain in the band which would be applicable to their station had they not reduced their capacity (see para 2.32 above).

Existing stations using biomass or mixed wastes

3.22 In the Government Response to the consultation published on 10th January 2008 some respondents raised concerns that banding up new dedicated biomass and anaerobic digestion stations would erode the capacity of existing plants to compete for fuels. This is because, unlike generating stations powered by wind, water etc, a major part of the costs of biomass and waste plants is the ongoing fuel cost.

3.23 Following analysis we are convinced that grandfathering existing stations at 1 ROC/MWh while banding up new stations would be detrimental to a competitive market for the fuel stock. We also believe that the existing plants could not have reasonably anticipated the introduction of banding, and made any contingency for this. We have therefore decided to allow existing plants to be banded up and receive the same level of support as new plants – subject to the section on grants below. This was generally welcomed by respondents.

3.24 A number of respondents questioned what would happen to biomass and waste plants at future banding reviews. As the principle of banding has now been established we believe that there is less reason to treat biomass stations as a special case. Our general expectation is that future banding decision will move towards banding down biomass plants as technology costs decrease and biomass supply chains mature.

Grants

3.25 Government Departments, particularly DECC and DEFRA support a number of renewable projects by providing statutory capital and research grants. The mechanism for distributing such grants is through grant offer letters entered into with the Secretary of State for the relevant Department.

3.26 As this money comes from tax-payers it is necessary that value for money is maintained. To this end, Government has set out a process to ensure that where a grant has been awarded on specific terms with regards to expected income, the project is not over-subsidised.

3.27 This is also important in ensuring we comply with EU State Aids rules. The Environmental Protection Guidelines for State Aids specifies that when a subsidy is provided to a business it is necessary to demonstrate the incentive effect/additionality of the aid being provided and ensuring that where there is cumulation of aids these are within specified thresholds.

3.28 The incentive effect/additionality of aid refers to the idea that an aid is necessary to incentivise a particular project to come forward. Where an aid is paid after a project is already in existence then there can clearly be no incentive effect/additionality and the aid is therefore illegal.

3.29 Recognising that it would be unfair to exclude these generating stations from the opportunity to benefit from banding up we are allowing such projects a choice. For non-biomass and waste generating stations which are accredited after 11th July 2006 and for which the developer/operator has been awarded a grant on or before 11th July 2006⁶, the operator will be able to choose:

- to retain the grant and receive 1 ROC/MWh for the renewable electricity generated by the generating station once it is constructed; or
- to repay and/or cancel the whole of the grant and be banded up. So, in the case of a station awarded a capital or research grant in January 2006 if it repays its grant it will move up to the higher band.

3.30 This rule will apply to biomass and waste plants in receipt of grants made before 1st April 2009, due to our decision to band up all existing plants regardless of whether they were in operation prior to 11th July 2006.

3.31 Projects will be required to decide which option they wish to pursue. If they choose the second option they will be required to repay the whole of their grant by no later than 31st March 2011 plus - subject to EU Commission State Aid clearance - interest at the Bank of England rate.

3.32 The Government will provide a list of generating stations in receipt of grants to Ofgem, and will send a letter to the generating station notifying the station of its options.

3.33 Where a project decides to repay the grant it will be required to enter an agreement with the Secretary of State to repay it, by contacting the grant administrator and arranging repayment. This intention to repay should be notified to the grant administrator by no later than 31st January 2011.

3.34 Once the generating station has repaid the grant they will receive a receipt from Government. They will then need to provide a copy of this to Ofgem.

3.35 Until Ofgem receive a copy of the receipt from the generator they will continue to be issued ROCs, at 1 ROC/MWh. The higher level of ROCs will be awarded from receipt of the evidence of repayment. Backdated ROCs for the period

⁶ Non biomass and waste generating stations which were accredited before 11th July 2006 and are in receipt of a grant will be grandfathered at one ROC per MWh as per the general grandfathering rules.

between the introduction of banding and the submission of the grant receipt to Ofgem will not be issued.

3.36 For future grant schemes, e.g. those grants awarded after the introduction of banding, it is expected that they will be awarded on the basis of income from banded ROCs. At any subsequent review we would expect the option to surrender their grant and band up to apply in the same way.

3.37 This policy, as set out above, is subject to state aid clearance by the European Commission. DECC Officials are currently still in discussion with Commission State Aids Officials about the terms of repayment.

3.38 Some respondents raised the issue of what happens when a plant in receipt of a grant goes into insolvency and is bought by another party. As the generating station is an asset which has been built with the benefit of a grant from public monies we are still bound to ensure value for money to consumers and the powers in the primary legislation attach to the generating station. It is, therefore, our intention to require repayment of the grant before allowing the plant to band up, where the grant letter has not specified that the grant should be repaid through the insolvency process.

Chapter 4 – Co-firing

Summary of key points in Chapter 4

- Co-firing will not be excluded post 2016.
- Co-firing with regular biomass will receive 0.5 ROCs/MWh.
- Co-firing with energy crops will receive 1 ROC/MWh.
- The cap on suppliers meeting more than 10% of their obligation from co-fired with regular biomass ROCs will be increased to 12.5% from 2010/11.
- Co-firing with regular biomass and CHP will receive 1 ROC/MWh.
- Co-firing with energy crops and CHP will receive 1.5 ROCs/MWh.
- Article 8(3) will be amended to include use of fossil fuel to purge the fuel system.
- Further work will be carried out regarding the costs of different configurations of co-firing syngas, biogas and natural gas.

4.1 Since the start of the RO, the inclusion of co-firing has been much debated. The key argument for its eventual inclusion was that co-firing would kick start the development of large-scale biomass supply chains including in particular those for energy crops.

4.2 The major risk that co-firing is seen to bring to the RO is that the amount of co-firing in any year is driven by the cost of the biomass and the relative costs of fossil fuels. As such, it introduces a level of unpredictability into the RO. Investors, in particular, have expressed their concern that unconstrained, co-firing would reduce the value in the RO available to fund other technologies and introduce undesirable volatility into the value of the ROC.

4.3 Co-firing under the RO is currently limited through a cap placed on suppliers. Until 2006 this cap allowed only 25% of a supplier's obligation to be met by co-fired ROCs. This fell to 10% in 2006, with exclusion from the RO after 2016.

Removal of exclusion of co-firing after 2016

4.4 When the Government decided to introduce a banded RO we also decided to retain co-firing within the RO for its existing lifetime (as long as it meets the criteria set out in the Energy Act 2008). We have therefore removed the exclusion after 2016.

Banding levels

4.5 In introducing banding, the Government's analysis took account of the fact that large coal-fired stations are existing assets, and that there is comparatively little requirement for new investment or scope for other market transformation. The Government's modelling suggested that we band co-firing of regular biomass at 0.25 ROCs/MWh.

4.6 In their responses, co-firers provided evidence that 0.25 ROCs/MWh was not sufficient to incentivise co-firing, particularly where they were installing direct injection or other technologies which require pelleted fuels. After some analysis it was decided to band co-firing with regular biomass up to 0.5 ROCs/MWh.

The cap

4.7 In the 2006 consultation Government asked whether we should consider removing the cap on suppliers meeting more than 10% of their obligation from ROCs generated by co-firers, and allow co-firing to remain within the ROO for the lifetime of the RO. This received mixed views. We therefore consulted in 2007 on a proposal to reduce the level of support to co-firing to 0.25 ROC/MWh and remove the cap. Most respondents were satisfied with removing the cap on this basis, though a large number – including larger suppliers, a number of investors and the major trade associations – stated their preference for retaining it. They were very keen that, at a minimum, an emergency criterion be retained to ensure that if co-firing looked likely to breach the 10% level a cap could be re-introduced. The major concern was that too much co-firing could significantly impact certainty about ROC values going forward therefore curtailing investment in renewables generation.

4.8 Owing to our decision to award electricity from co-firing 0.5 ROC/MWh and the concerns which had been expressed, we decided to retain the cap, and proposed including an emergency criterion which would lead to a review of the banded regime on the basis of evidence that competition is being constrained.

4.9 There has since been some suggestion that retaining the cap works against independent generators, and it should be removed. We have carried out some analysis on this issue. It seems that not all of the 10% of suppliers' obligations are available for co-fired ROCs. In practice, it seems likely that only some 80% of the headline market for co-fired ROCs is in practice available. Therefore we believe that increasing the cap to 12.5% from 2010/11 is an appropriate course of action

Co-firing with CHP

4.10 The majority of respondents agreed that more ROCs should be given to co-firing with CHP. This support was however contingent on the understanding that this would be a temporary measure and an incentive scheme for heat, currently being developed, would replace this support in the medium term.

4.11 However, most respondents felt that the proposals detailed in the statutory consultation were overly complex, especially for a temporary measure. We understand the need to ensure that the final system is as simple as possible and will work with the industry and Ofgem to ensure that the final decision is communicated clearly.

4.12 There were a large number of suggestions on specific changes respondents wanted to see ranging from requests to simplify the entire process to ensuring the system was comprehensive enough. Some respondents asked for more flexibility regarding fossil fuel used for permitted ancillary purposes as set out in Article 8(3) of the current ROO but did not specify exactly what these additional uses could be.

The purpose of Article 8(3) is to allow for uses of fossil fuel without which the generating station would not generate electricity rather than to allow fossil fuel for any use to qualify. An additional use that seems to fall into this category is the use of fossil fuel to purge the fuel system of other fuels after generation of electricity has ceased where fossil fuel is used for ignition. This will be included as an additional ancillary purpose.

4.13 There were some comments on other aspects of the treatment of co-firing more generally and the requirement for different definitions or thresholds to apply to different configurations, e.g. co-firing of syngas / biogas and natural gas. Respondents argued these different configurations require higher levels of investment than when co-firing small amounts of biomass (as a proportion of total fuel used) in existing fossil fuel power stations on which the support levels have been based. We have therefore decided that electricity generated by co-firing of gaseous fuels (e.g. sewage gas, landfill gas, anaerobic digestion or gasification or pyrolysis should not be included in the co-firing band).

Chapter 5 - Good Quality Combined Heat and Power (GQCHP)

Summary of key points in Chapter 5

- The UK's CHP Quality Assurance Programme (CHPQA) indices have been revised to ensure renewable CHP in the UK can achieve the level of ambition needed to meet Renewable Energy Strategy targets.

5.1 The statutory consultation asked respondents to consider the new arrangements for supporting CHP within the RO, based on the UK's CHP Quality Assurance Programme (CHPQA), which is in turn based on the new requirements of the EU Cogeneration Directive (8/2004)⁷. Just over half the respondents on this question felt that the proposals will allow the majority of renewable CHP schemes to benefit fully from the RO.

5.2 Several responses to the statutory consultation noted that the revised CHPQA indices, the "X and Y" values, are prohibitive to the development of new biomass and EfW CHP.

5.3 The rationale for additional support for renewable CHP in the RO is the increased efficiency in energy production deriving from CHP systems. The EU Cogeneration Directive sets out how to establish high efficiency CHP. The Directive denotes high efficiency CHP as schemes that achieve 10% prime energy savings against the separate generation of heat and power (i.e. from a power station and standalone boiler). The Commission then published, in 2007, harmonised reference values for the separate generation of heat and power, against which Member States must test the efficiency of CHP schemes. The reference values cater for various size categories of CHP scheme running on the full range of different fuels. The CHPQA indices were modified to take account of these requirements. We know that this revision to the indices means that biomass CHP, including energy from waste, must pursue better utilisation of heat to reach the higher efficiencies required.

5.4 We note the impact that consultees claim these revised indices will have. We are reviewing the CHPQA indices as a result of representations through this statutory consultation in part to ensure that the UK can meet the level of ambition for renewable CHP needed to meet the targets foreseen in the Renewable Energy Strategy consultation document. We have revised Guidance Note 44 to incorporate these changes, the new version has been released along with this Government Response and is now available at www.chpqa.com.

⁷ Directive 2004/8/EC of the European Parliament and of the Council of 11th February 2004 on the promotion of cogeneration based on a useful heat demand in the internal energy market and amending Directive 92/42/EEC

SECTION 2: OPERATING THE BANDING REGIME

Chapter 6 - Calculating the Obligation

Summary of key points in Chapter 6

- Obligation to be set in ROCs/100 MWh.
- Obligation for 2009/10 to be 9.7 ROCs/100 MWh.
- The result of calculations A, B, and C (set out below) will set the Obligation from 2010/11. Result to be announced 1st October 2009.
- We will keep the date on which we announce the Obligation ahead of an Obligation Period under review, and as we gain experience will see if we can make the announcement earlier.

6.1 The statutory consultation set out our proposed process for calculating and announcing an Obligation denominated in ROCs that would be in line with our existing announcements on the levels of the RO and thereafter keep RO levels above renewables generation up to our existing aspiration for some 20% of electricity to come from renewables. Of those who responded a majority supported the proposal but there was some dissent. Most of those who disagreed, did so on the basis that they would prefer the Obligation to be at least presented as a percentage of electricity supplied rather than directly as a number of ROCs.

6.2 We have examined the issues raised and have not been persuaded that there is any reason to change the fundamental approach we proposed. On the subject of how the Obligation is framed this is set out clearly in the changes being introduced through the Energy Act 2008:

“The renewables obligation is that the designated electricity supplier must, by each specified day, have produced to the Authority the required number of renewable obligation certificates in respect of –

the amount of electricity supplied by it to customers in Great Britain during the specified period...”

In practice we do not believe that this will be a major change as the current RO in effect requires the presentation of a set number of ROCs to Ofgem as evidence for the number of MWh of renewable electricity supplied.

6.3 Other respondents argued for earlier announcements of the level of the Obligation than our proposal of 1st October preceding the beginning of the Obligation Period. We had chosen 1st October based on our previous consultation and taking into account that suppliers generally set their consumer tariffs early in the New Year. We also balanced the desire for as much notice as possible with the accuracy that would come with more information. However, some respondents claimed that the bulk of large business contracts are negotiated during the summer for a 1st October contract start. They therefore requested that the Obligation would be announced earlier.

6.4 We are not yet certain whether we can meet this request without jeopardising our ability to make sufficiently accurate predictions of the ROC issue for the year in question. Therefore, we do not propose making this change but will keep it under review as we put in place our in-house processes. We do not expect the headroom mechanism to take effect for a few years and this will give us time to assess whether this is a workable proposal.

Calculating the Obligation – 2009/10

6.5 As set out in the statutory consultation the future Obligation will be calculated in the following way.

6.6 For the Obligation Period 1st April 2009 to 31st March 2010 suppliers will be required to produce 9.7 ROCs for every 100 MWh of electricity supplied (and pro rata for any part 100 MWh supplied).

Calculating the Obligation – For the following years

6.7 To work out the number of ROCs to be produced to Ofgem, the Secretary of State will need to carry out two different but related calculations to determine (i) the total number of ROCs that will need to be produced across the UK and (ii) the ROC obligation of an individual electricity supplier.

Total Number of ROCs

6.8 Before the start of an Obligation Period the Secretary of State will estimate the amount of electricity in MWh that will be supplied across the UK during the course of that Obligation Period – e.g. 10, 000 MWh. This total amount is then apportioned according to market share across all three UK RO jurisdictions: England & Wales (8,500), Scotland (1,000) and Northern Ireland (500).

6.9 From the total supply of electricity referred to above, the Secretary of State then determines the amount of electricity that is to be generated from renewable sources. It is from this determination that we deduce the total number of ROCs.

6.10 Schedule 1 to the current ROO currently expresses the Obligation as a percentage of electricity supplied. In future these numbers will be expressed as the number of ROCs required to be presented for every 100 MWh of electricity supplied.

6.11 The determination of the overall size of the combined Obligations across all suppliers and the three jurisdictions is done by carrying out Calculations A, B and C which are set out below.

6.12 Calculation A – Taking the figures in Schedule 1 to the ROO to see how many ROCs would be required given the expected amount of electricity that will be supplied.

Example: If for 2013/2014, the Secretary of State estimates that the total number of MWh that will be supplied will be 8,500 in England & Wales, 1,000

in Scotland and 500 in Northern Ireland then looking at Schedule 1 to the ROO, the minimum amount of renewable electricity to be supplied in 2013/2014 in order for all suppliers to meet the intended Obligation level will be 13.4 ROCs for every 100 MWh of the total amount of electricity supplied, which the Secretary of State has estimated at 8,500 MWh in England and Wales. So, 1,139 ROCs will have to be presented for the Obligation to be fully met in England and Wales. Using similar calculations for Scotland (134 ROCs) and Northern Ireland (32 ROCs) the total for Calculation A will be **1,305 ROCs**. Note that Northern Ireland's Obligation level in the corresponding period is 6.3% - or 6.3 ROCs/100 MWh).

6.13 Calculation B – As well as carrying out the estimates in paragraph 6.8 above before the start of each Obligation Period the Secretary of State will also estimate the amount of renewable electricity that is likely to be produced from the available renewable generation already existing, and that scheduled to come on stream in that year. He will then calculate how many ROCs are likely to be issued in respect of each technology type (which will depend on the band into which the technology in question falls). The Secretary of State will then add all the ROCs together to obtain a UK global figure.

Example: Let us say that the total amount of renewable electricity to be generated in the Obligation Period 2013/14 has been estimated at 1,000 MWh. It has been projected that it will come from the following sources: co-firing - 100 MWh, wind - 500 MWh, and solar - 400 MWh. If ROCs are awarded to the technologies as follows: co-firing is awarded 0.5 ROCs/MWh (50 ROCs), wind is awarded 1 ROC/MWh (500 ROCs) and solar is awarded 2 ROCs/MWh (800 ROCs) then the total number of ROCs is 1,350. This figure is then multiplied by 108% to achieve the headroom: 1,350 ROCs x 108% = **1,458 ROCs**.

6.14 Calculation C – This calculation sets the maximum upper limit to the Obligation, ensuring it does not exceed 20%. For this calculation the Secretary of State will take the estimate in paragraph 6.13 for the total amount in MWh of electricity which he thinks will be supplied by suppliers in that period. He will then multiply this by 20 ROCs/100 MWh.

Example: If for 2013/2014, the Secretary of State estimates that the total number of MWh that will be supplied will be 10,000 MWh he will then need to determine what 20 ROCs/100 MWh of this will be, in order to set the maximum limit of the Obligation. For example 10,000 MWh multiplied by 20/100. So, 2,000 ROCs will have to be supplied for the Obligation to be fully met.

6.15 In the above calculations the total ROC Obligation will be:

- (a) The figure from Calculation A, if the figure arising from Calculation A is higher than the figure arising from Calculation B;
- (b) The figure from Calculation B, if the figure arising from Calculation B is greater than the figure arising from Calculation A, but less than the figure from Calculation C; or

- (c) The figure from Calculation C, if the figure arising from Calculation B is greater than the figure arising from Calculation A, and also greater than the figure from Calculation C.

6.16 In the example above it can be seen that the figure arising from Calculation B (1,458) is higher than that arising from Calculation A (1,305), but lower than that arising from Calculation C (2,000), so the total ROC Obligation would be taken from Calculation B - **1,458**.

ROC obligation of an individual electricity supplier in England & Wales

6.17 Where Calculation A sets the obligation then the required number of ROCs to be produced by a designated electricity supplier for every 100 MWh of electricity that it supplies to customers in England and Wales during an Obligation Period is that set in the first column of Schedule 1 of the 2009 ROO

6.18 Where Calculation B is used to set the total UK ROC Obligation, the ROC obligation of an individual supplier in England and Wales would then be determined by first applying the relevant percentage from Schedule 1 of the 2009 ROO against the estimated electricity supply in England and Wales and then working out what proportion this is of the total supply in all three jurisdictions.

Example: 13.4% of 8,500 is **1139**. This is **87.3%** of the total number of Calculation A UK ROCs (1,305).

6.19 To be able to compare on the same basis calculations A & B use the same overall proportion of 87.3% to work out the number of ROCs using the result of Calculation B for the UK.

Example: - 87.3% of 1,458 = **1,273**

6.20 The supplier obligation in ROC/100 MWh will then be calculated by dividing the estimated Obligation for England and Wales by its estimated market size.

Example: $1,273/8,500 \times 100 = 15.0$ ROCs/100 MWh

6.21 Mathematically the calculation can be simplified into the formula set out below.

$$\frac{\text{Figure from first column of Schedule 1} \times \text{Calculation B}}{\text{Calculation A}} \times 100$$

6.22 Where calculation C sets the Obligation the required number of ROCs to be produced by a designated electricity supplier for every 100 MWh of electricity that it supplies to customers in England and Wales during an Obligation Period is 20 ROCs/100 MWh.

6.23 The number of ROCs/MWh for the coming Obligation period will be announced by the Secretary of State six months before the start of that Obligation Period.

6.24 In considering how the individual suppliers' obligations would be set under a headroom mechanism we also considered establishing the predicted ROC issue, adding headroom and apportioning this against the market share of the different suppliers. This would mean that the overall Obligation is not dependent on the size of the electricity market – but would also make it more difficult for suppliers to estimate the size of their own obligations as it would be dependent not only on their own sales but also on the sales of their competitors.

How the future ROC issue will be predicted

6.25 The statutory consultation document proposed that we would use a number of existing sources held by or contracted to Government to estimate future electricity supply and ROC issue. These are:

- The Renewables and CHP Register (incorporating the ROC Register) held by Ofgem.
- The list of stations which are accredited and pre-accredited under the RO held by Ofgem.
- The statistical returns made to DECC by major power producers.
- The stations which have sought consent under s36 of the Electricity Act.
- The RESTATS database which is run under a contract to DECC.

6.26 We asked whether there are other sources of information that the Government should use to predict the future size of the ROC supply market. Most respondents who addressed this question thought that the sources listed above are useful but suggested that we should also check these sources against those held by others including BWEA's UK Wind Energy Database.

6.27 Other suggestions included:

- checking historical load factors for wind farms against Meteorological Office reports on wind average speed for the period in order to avoid distortions due to unusual weather conditions
- consulting with large suppliers and others who already make ROC market predictions
- obliging developers subject to s36 of the Electricity Act clearance to tell us when these stations are due to be commissioned.

We will look to take these suggestions forward as we develop our methodology.

Cliff Edge

6.28 The statutory consultation asked whether respondents agreed that we did not need to bring forward provisions to address the cliff edge issue in the ROO 2009. This is because we know that the implication of the EU 2020 target is that we will need to either increase the upper limit of the RO and/or provide additional incentives,

and we believe that the decision on how this is managed may have a significant bearing on the appropriate mechanism for mitigating this risk.

6.29 The majority of respondents who addressed this issue agreed and those who disagreed did not present evidence as to the positive value that any such mechanism would have if implemented at this stage. We will revisit this issue in our work on how the RO can best be adapted to help the UK meet its share of the EU renewables target.

Chapter 7 - Banding Reviews

Summary of key points in Chapter 7

- This chapter combines responses to chapters 7 and 8 of the statutory consultation.
- Bands will be reviewed periodically. The next banding review is expected to come into effect on 1st April 2013.
- Independent consultants will be appointed; their report will subsequently be reviewed by RAB and subject to a statutory consultation.
- Decisions on the banding levels will be taken by the SoS and Ministers in the respective Devolved Administrations based on the independent advice and responses to the statutory consultation.
- DECC will commission analysis on a UK wide basis.
- Secretary of State will have discretion to launch an early review of banding levels in certain defined circumstances.

Advice on future banding levels

7.1 As previously proposed, future decisions on changes to bands will be taken by the Secretary of State (SoS) based on independent advice. Independent consultants will be appointed to provide advice on future banding levels on similar lines to that conducted prior to the decisions made on the bands to be introduced from 1st April 2009. The Renewables Advisory Board (RAB) will then have a formal role to peer review the work before any recommendations go out to statutory consultation. The SoS will then make the final decisions on banding levels based on an assessment of responses to the statutory consultation and the advice provided by the Independent Consultants and RAB.

7.2 The majority of respondents agreed with this proposal. However, a need for clarity on the process was expressed; in particular how industry will have the opportunity to input into this process. We understand this is important and will set out the detail of the process in the implementation guidance we intend to publish in the New Year.

7.3 It should be noted that although the RO operates on a UK-wide basis there are three separate Obligations for Scotland, Northern Ireland, and England and Wales. Decisions on the banding levels for the Devolved Administrations will be taken by the respective Ministers. However, whilst the Devolved Administrations may wish to undertake their own independent advice, DECC will commission the analysis carried out by their independent consultants on a UK-wide basis. RAB will also have representatives from the Devolved Administrations to ensure a UK wide perspective. Government is committed to working closely with the Devolved Administrations to encourage a consistent approach.

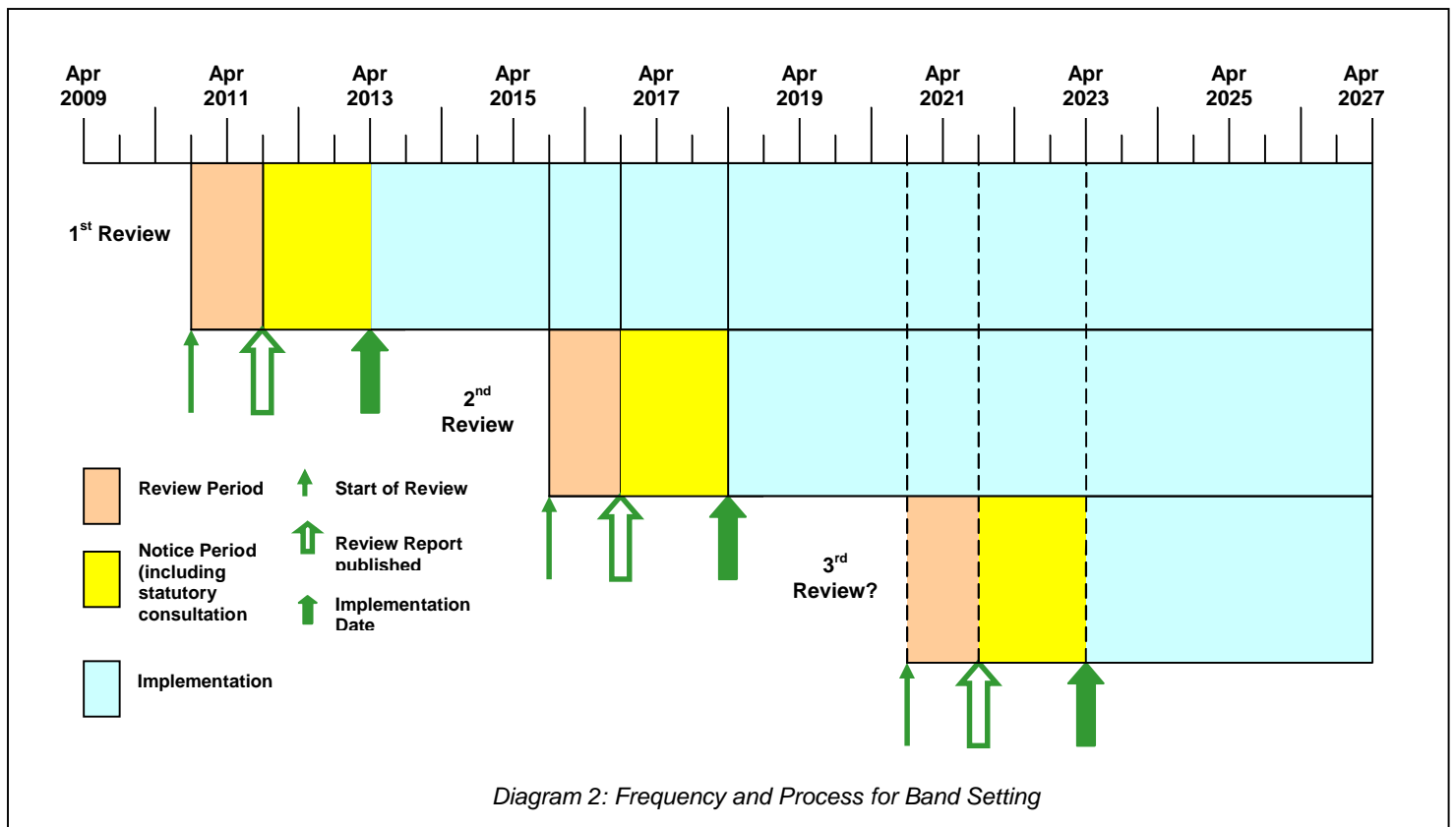
Scheduled Band Setting Dates

7.4 In order to ensure that technologies are not over or under rewarded as the renewables electricity generation market develops, it is intended that the bands will be reviewed periodically at specified dates.

7.5 As the level of support for renewable generating stations will in the future be increasingly dependent on the carbon price, we have announced our intention to link reviews of bands to the timetable for the different phases of the EU ETS. Phase 2 of the EU ETS scheme will run from 2008 to 2012 and it is anticipated that Phase 3 will run from 2013 to 2020 (originally this was thought to be 2018). The Government, therefore, intends that any changes in bands should come into force on 1st April 2013 to take into account the expected impact of Phase 3 of the EU ETS

7.6 In order to ensure as much notice as possible of future banding proposals we have announced our intention to publish details of bands eighteen months ahead of the five-year period they will affect. In order to achieve this, we will need to start a review using consultants two-and-a-half years ahead of the date for introduction of the new bands, e.g. for the 1st April 2013 period we will launch the review on 1st October 2010. The review period will take one year.

7.7 The diagram below sets out our proposed process.



Early Reviews

7.8 The general principle of banding reviews is that the SoS will not make wholesale revisions to the banding regime except in accordance with a specified time period. However, in order to deal with significant changes that occur outside of the proposed timetable, a review of the whole or parts of the banding regime will be permissible provided one or more trigger points (as set out below) were to occur.

7.9 Such reviews are expected to happen rarely, if at all. The details of how these early reviews will work will be set out in the implementation guidance we plan to publish in the new year. However, it is expected early reviews will be completed within six months and implemented at the start of the next Obligation Period (subject to Parliamentary procedure).

7.10 The circumstances that can trigger a review are:

- Where there is a significant change in the cost regime for grid connection or transmission. Grid connection and transmission are essentially regulated markets where decisions by Ofgem and Government can have significant impact on costs over which generators may have little control on commercial terms. A significant change in the costs for generating stations of a new connection to a distribution or transmission network or a significant change in the costs charged by the transmission companies in transmitting electricity could impact on the viability of generating electricity from renewable sources. As a result a wholesale review of banding might be required to band all technologies up to compensate for these additional costs.
- Where a new renewable generating technology emerges with a potential to deploy on a large scale because it is cheap to operate. This could result in developers shifting to generate from this cheaper alternative. This could result in having to band the new technology down to avoid the market being flooded with ROCs and the new technology being over-rewarded. A further objective in banding cheap technologies down is to strike a balance between deploying lots of cheap technologies now and bringing on a more diverse range of technologies which will contribute more over the medium term.
- Changes to other support schemes which will have a significant impact on the generation of electricity from renewable sources. Examples here would be the proposed introduction of a feed-in tariff or a renewable heat incentive..
- Evidence of significant and sustained variation in net costs or reviews (for one or more individual technologies) changing the economic case from that assumed in the setting of banding levels. For example, if the price of steel changes significantly it could impact on the cost of wind turbines or if the advice on which Ministers took decisions was subsequently shown to have been flawed this could impact generally on the economics of the RO.
- The co-firing cap creates significant distortions in the ROC market. For example if there is evidence that co-fired ROCs are consistently trading at a significantly lower price than those from other technologies and this is working to the disadvantage of independent generators.
- Where there is over-compliance. Over-compliance means that the RO has become such a successful instrument that more electricity is being produced from renewable sources than was expected. Where this is the case the level of

ROCs in the market will exceed the level of the Obligation. This will cause the price of ROCs to fall as there will be more supply than demand for ROCs which will dent confidence in the market. In these circumstances a whole scale review might be required to band down a range of generating technologies.

- Any other unforeseen event which could have a significant effect on the operation of the ROO.

7.11 It will be for the SoS (or relevant devolved administration Minister) to initiate an early review when one or more of these criteria has been met.

SECTION 3: BIOMASS AND WASTE ISSUES

Chapter 8 - Sustainability Reporting

Summary of key points in Chapter 8

- The proposed criteria for biomass sustainability reporting will be retained.
- Provision of data is currently for information purposes only, but requirements may change in 2010 at the earliest, as a result of work going on under the Renewable Energy Directive.
- Ofgem will postpone or revoke ROCs in the event of generators not making the required return within a set period.
- The sustainability of including certain biomass in the RO has been raised and in the case of tallow we are minded to look at potentially limiting its use within the RO next year.
- The list of environmental quality assurance schemes included has been extended.

8.1 The statutory consultation explained Government's intention to introduce sustainability reporting to the RO from April 2009. The proposed requirements and process of reporting were explained and comments requested.

Sustainability of biomass

8.2 The Government recognises the importance of sustainability in the use of biomass for electricity generation and supporting the most sustainable forms of biomass over the long term. For this reason, we will be introducing sustainability reporting for those using biomass as part of reform of the RO.

8.3 All respondents supported the principle behind sustainability reporting and understood why the new requirements for reporting the sustainability of biomass were being put forward. Indeed, the vast majority of respondents felt that the methodology for reporting detailed in the statutory consultation was the correct approach. However, there were particular concerns around the provision of unknown information, the use of the word "consignment" and which biomass would need reporting on at implementation. The details of our approach to these particular concerns are set out below.

8.4 The sustainability reporting requirement within the RO is designed to be proportionate. Indeed, much of the information that will be required should already be known in many cases. If a supplier is unable to provide any aspect of the required information after making reasonable efforts, the response, "not known" will be permissible. Only if Ofgem later find that this is not the case will the issue of ROCs be postponed or, ultimately, refused.

Mass Balance Vs. Track and Trace

8.5 The use of the word “consignment” in the draft 2009 ROO caused some respondents to raise concerns that we were planning to implement a “track and trace” system (whereby a consignment with sustainability criteria must be kept separate from other fuels at all stages, from production to use) of sustainability reporting. This is not the case. We understand that although we do require this technique for energy crops, our policy must be proportionate; currently, we agree with the industry view that the biomass market would not be able to support such a system at this stage. We are therefore proposing to introduce a “mass balance” approach. Under this system, when two or more consignments of biomass are mixed (i.e. in storage, transportation or processing), the amount of fuel that went into the mix with a set of sustainability standards is the same amount that can be claimed to come out the other end.

8.6 We have retained the use of “consignment” within the Order, as there is no better legal wording to describe a shipment of material. However, we will work with Ofgem to ensure that a “mass balance” system is allowable under this new reporting regime and will make this clear in the forthcoming Ofgem guidance.

8.7 The introduction of sustainability reporting inevitably introduces operational issues on implementation, particularly as reporting could be based on the actual biomass used during the Obligation Period or on the biomass that is delivered during the year. It is our view that the sustainability reporting should be linked to the actual fuel used during the Obligation Period. We realise that full knowledge of all the fuel used during the first Obligation year will not be possible – especially if the related contracts were signed months or years in advance. In these circumstances, generators can specify that certain criteria are unknown.

Sustainability of specific sources of biomass

8.8 A number of respondents raised concerns over the sustainability of the use of certain specific biomass feedstocks in the RO, given that in some cases, such as tallow, there is a limited supply. However, we need to carry out further analysis as part of the wider work on sustainability before coming to any final conclusions.

8.9 In the case of tallow our initial analysis indicates that there may be some merit in these concerns. The WID legislation, as it stands, restricts the use of tallow for generating energy. This legislation is currently being revised, and the restrictions on tallow are likely to be lifted in 2010/11. Given there is a limited supply, we are minded to consider capping the size of station which can use tallow or quantity of tallow a station can use to claim ROCs from 2010. We will consult on this, as part of the consultation on further changes proposed in the Renewable Energy Strategy, next year.

Sustainability Reporting Requirements

8.10 The information which generators will be asked to provide to begin with is based on that requested by the Road Fuel Transport Agency for reporting under the Road Transport Fuel Obligation. This information is set out in Part 7 of the Draft

ROO and summarised in the box below. More detail will be set out in guidance issued by Ofgem.

- the material from which the biomass was composed (for example, wood);
- what form it took (for example, wood can take a variety of forms, depending on how it has been processed);
- its mass or volume;
- whether it was a by-product of a process or a waste;
- the country where it was grown or obtained;
- whether it was an energy crop
- whether it was certified under an environmental quality assurance scheme and, if so, the name of the scheme; and
- the use to which the land on which any plant biomass was grown has been put since 31st November 2005.

8.11 There was considerable variation in views about which criteria should be included within the sustainability reporting. We have considered these and do not propose to change the criteria set out in the statutory consultation. We feel that the correct balance is struck between requiring generators to have a good understanding of how and where their biomass fuel has been sourced and the cost implications of reporting this information.

8.12 Concerns over competition for sustainable fuel sources with the transport sector were also raised. Government understands that the issue of competition will become more pressing with the development of the international biomass market and need to meet our European renewable energy targets.

8.13 Some respondents felt that the reporting should include full Life Cycle Analysis (LCA). LCA could be viewed as the end goal of sustainability reporting, however introducing LCA for a wide range of fuels could be expensive and time consuming. It is likely the evolving standards for biomass and bio energy in general will focus on greenhouse gas emissions in the near term. This subset of full LCA is a compromise, but one that is necessary to ensure that the industry is not unduly burdened by any future reporting regime. Defra has worked with the Environment Agency to create a free to use greenhouse gas emissions assessment tool for Biomass called BEAT₂⁸. This tool provides a method for assessing the potential benefits, as well as associated environmental impacts, of bioenergy technologies⁹.

Environmental Quality Assurance Schemes

8.14 In the statutory consultation we asked whether there were any other environmental quality assurance schemes that should be considered. Several respondents suggested schemes, and we have considered each of these for inclusion. At this stage, our aim in asking operators whether the biomass or the

⁸ www.tinyurl.com/6k67rh

⁹ BEAT₂ is a UK-based tool and cannot be used to assess bioenergy options outside the UK.

material from which it is created has been certified under an environmental assurance scheme is purely to gather information on the range of schemes currently in use by industry. We will not be making a judgement on the sustainability, or otherwise, of the biomass on the basis of certification under any of these schemes. As such, we have included any existing schemes suggested by respondents which contain relevant environmental criteria. A list of these is provided in Annex B.

8.15 Some of the schemes proposed for inclusion by respondents are concerned only with animal feed/food safety and quality, with no criteria relating to environmental impact. For this reason, we do not consider it relevant to include these schemes.

8.16 The issue of biomass sustainability is currently generating a high level of attention and activity. We are aware of a number of efforts to develop international criteria and standards on biomass sustainability, such as the CEN/TC 383 working group; the World Energy Council Biofuels Standards and Technologies Task Force and the Global Bio-energy Partnership (GBEP) Task Force on Sustainability. At such a point as these are established, we will consider them for inclusion.

8.17 Furthermore, as stated in the statutory consultation, the ongoing work at a European level to develop a sustainability standard for biomass under the Renewable Energy Directive may lead to future changes to reporting requirements under the RO.

Sustainability Reporting Process

8.18 We have set out our intention that generators using biomass will be required to provide Ofgem with certain sustainability information. The specifics of the information and the format in which it must be provided, will be set out in detailed guidance written by Ofgem.

8.19 Reporting will be required on any individual fuel used to generate electricity in stations with a net capacity greater than 50 kW. The fuel must be 90% or more derived from animal and plant matter but not on any such substance which is supplied to the generator as part of a mixture which is less than 90% plant and animal matter (for example a sustainability report will not be required on the renewable content of mixed waste, unless the mixed waste's energy content is 90% or more derived from animal and plant matter).

8.20 Generators using biomass will be expected to provide their annual return to Ofgem within two months of the end of the Obligation Period, i.e. 31st May. This date is consistent with the period of two months which generators are given to claim ROCs for a given month's generation. It will therefore be the latest date by which they can claim ROCs for the final monthly period in a given Obligation Period, and therefore the latest date by which all claims for ROCs in that Obligation Period should be known.

8.21 Where generators do not make the required return by the specified date, Ofgem will have the discretion to postpone the issue of ROCs for subsequent periods – equivalent to the number of ROCs to which the biomass relates – until the

generator makes the return. The reason for choosing to give Ofgem discretion is to ensure that in the event that there is a reason for delay in providing the return which they find acceptable they should not be required to postpone the issue of ROCs for that period.

8.22 If, however, the generator fails to make the required return by three months after 31st May, i.e. 31st August the Authority will refuse to issue – rather than just postpone – these ROCs – i.e. provision of a Sustainability Report more than three months late will not lead to these ROCs being issued. This was universally supported by respondents.

8.23 Where we talk about postponing of, or refusal to issue ROCs, we are not referring to the specific ROCs issued for the electricity generated by the biomass to which the return refers. These will have been issued and probably sold on to third parties. The ROCs being postponed or refused are ROCs equivalent in number to those ROCs the return refers to. For example, a generator using biomass is awarded 1,200 ROCs in a given compliance period; they then fail to provide a return for this compliance period (and do not have a valid reason for failing to provide the information); Ofgem will postpone the issue of ROCs from the next compliance period up to a total of 1,200 ROCs. If the generator does not manage to provide the information by 31st August Ofgem will refuse to issue these ROCs – i.e. the generator will lose its entitlement to that number of ROCs, even if a report is subsequently provided. Any ROCs that the generator is due over the 1,200 ROCs postponed/refused will be issued as usual.

8.24 We accept that in the early stages after introduction of this requirement, it may not be possible for the generator to provide all the required information. However, there will be some information – such as biomass type – which Ofgem will consider as being necessary information. Ofgem will also have the power to postpone or refuse to issue ROCs if a generator states in its return “no information available” and Ofgem later finds that the generator did in fact have the information required.

8.25 A key additional point raised within the responses was that Ofgem should be given discretion to assess issues on a case by case basis and that a clear and consistent appeal process should be put in place. As a result of this, Government will be working with Ofgem to implement the method of postponement and revocation of ROCs where they have already been issued in circumstances where generators do not fulfill the biomass sustainability reporting requirements.

Chapter 9 - Determining the Renewable Content of Biomass, Waste and Fuels produced through Advanced Conversion Technologies (ACTs), (Anaerobic Digestion, Gasification and Pyrolysis)

Summary of key points in Chapter 9

- The definition of biomass is clarified.
- There is no maximum level for the renewable content of waste. Where the operator can prove the renewable content of the waste stream is greater than 50% through direct measurement.
- The 50% level for inferred measurement will be permitted and will reduce in line with the Landfill Allowance Trading Scheme (LATS).
- We agree to accept evidence that residue char for gasification and pyrolysis is less than 100% renewable.
- We will work with Ofgem to develop further guidance.

Biomass

9.1 As a result of discussions with Ofgem, we have become aware that some further clarification is required regarding the circumstances in which a fuel can be defined as biomass (or treated as biomass by virtue of being part of a mixture of fuels with a combined energy content which is at least 90% derived from relevant material¹⁰) for the purposes of the RO. Currently Articles 7 and 8 of the ROO 2006 are seen as difficult to interpret. We have therefore revised the definition of biomass so that any fossil fuel cannot be intentionally added in order to "boost" the fuel. However, a biomass fuel may contain a small amount of fossil fuel in the following circumstances:

- (i) if the fossil fuel was added to the relevant material as an incidental consequence of a process to which the relevant material was subject (for example, if relevant material is wrapped in plastic packaging);
- (ii) if the biomass fuel is waste, provided that the fossil fuel has not been added to the waste for the purpose of it being used as a fuel.

9.2 Fossil fuel which is present for any other reason will not be treated as part of the biomass fuel. Its presence will therefore lead to the station being classed as co-firing, unless the fossil fuel is being used for permitted ancillary purposes only (see Part 1 of the draft ROO).

Waste

9.3 In order to address concerns raised by industry regarding the difficulties of measuring and sampling the renewable content of mixed waste, the statutory consultation recommended that for waste, the use of indirect methods of measurement should be permissible where the renewable content was less than

¹⁰ "Relevant material" is material which is, or is derived directly or indirectly from, plant matter, animal matter, fungi or algae.

50%, with direct measurement required if a renewable content greater than 50% was requested. Where use of ACTs was concerned, the recommendation was that the char energy content would be deducted from the input feedstock. Respondents were requested to comments on the methodologies.

Determining the renewable content of waste

9.4 A substantial majority of respondents felt the approach explained in the statutory consultation would address the concerns of industry.

9.5 As noted in the statutory consultation, current technology limits the cost-effective measurement of the renewable content of mixed waste. We believe that the process set out in the statutory consultation is a robust attempt to deal with these current challenges but we understand that further research is necessary in this area and we are committed to working with Ofgem, industry and the R&D community to further activity in this area.

9.6 There was some confusion within the responses regarding the new procedures for determining the renewable content of waste, these have been developed in consultation with Defra, Ofgem and the industry and are explained below.

Waste with up to 50% renewable energy content

9.7 Operators will need to supply Ofgem with satisfactory evidence (without necessarily requiring those operators to directly measure) to justify the renewable energy content of the waste that they wish to claim.

Waste with 50% or more renewable energy content

9.8 Where an operator wishes to claim ROCs on 50% or more of the total energy content of the waste fuel stream, they will be required to directly measure the renewable energy content of the waste and supply this evidence to Ofgem.

9.9 We understand that the technical and cost hurdles of direct measurement may effectively create a 50% ceiling on the amount of renewable energy content, but, as noted above, we are committed to working with the industry to develop methods to overcome these challenges.

Claiming 50% renewable energy content level for municipal waste

9.10 We do intend to allow Ofgem to award ROCs on up to 50% of the total energy content of the waste fuel stream to operators who can satisfy evidential requirements set out below. This level is based on the approach used for Levy Exemption Certificates (LECs) and a conservative extension of the Landfill Allowance Trading Scheme (LATS), which deems collected municipal waste to be 68% biodegradable in content. However, over time, this will change as local authorities continue to introduce measures to reduce waste and increase separate collections of food waste and other waste streams for recycling. Defra's waste policy projections suggests that removing a large proportion of recyclable materials from the residual waste

stream (including, for example, high levels of food and green waste in line with the Government's aspirations) would reduce its biomass energy content to around 35% by 2020. This is illustrated by the scenarios in Annex E, which suggest that high rates of recycling could result in residual biomass energy content in the range 30–38%.

9.11 Commercial waste is generally expected to be more homogenous in nature, making it easier to monitor.

How this will work

9.12 We would expect this approach to mainly apply to municipal solid waste where the varied nature of the waste makes it difficult to cost effectively measure and sample the fuel and there is a lot of evidence of the composition collected for other purposes. This does not mean a similar approach cannot be adopted for other waste streams but just that more evidence may be required in order to agree the “declared biomass content”.

9.13 Ofgem will set out the precise detail of how this process will work in guidance but we would expect it to work as follows. As happens at the moment all operators will have to agree fuel measurement and sampling for their generating station before any ROCs can be issued by Ofgem. The new approach will allow Ofgem to consider evidence other than direct measurement for determining renewable content. Where an operator is going to be using waste as a fuel and wants to claim ROCs on the electricity generated from a “declared renewable content” of that waste they should first discuss with Ofgem.

9.14 The operator will have to provide Ofgem with evidence of the source(s) of the fuel and, where the fuel is homogenous in nature, justification of why a declared level is required given that such materials should be easier to measure and sample. In assessing the case for accepting the “declared renewable content” of waste Ofgem will be able to ask for any information they think is required to support this request using contractual evidence or data derived from relevant waste composition studies.

9.15 Ofgem will consider such evidence with reference to the Gross Calorific Values of the various main components of waste used in our consultation on reform of the RO¹¹. Where this analysis shows the renewable content of the waste stream to be greater than 55% Ofgem should agree the request for a “declared renewable content” of 50% to be applied to that station. Where the analysis shows the renewable content of the waste stream to be less than 55% Ofgem will ask for further information including further exploration of the sources of the waste in order to agree the declared renewable content on which ROCs can be issued.

9.16 If Ofgem knows or has reasonable grounds to believe that any information or evidence relating to the fuel stream is incorrect in any material respect they may decide not to issue ROCs in respect of the electricity to which this information or evidence relates. In these circumstances Ofgem will be able to require the generator to prove, to its satisfaction, the accuracy of the information, and will be able to

¹¹ www.berr.gov.uk/files/file39497.pdf

require the generator to provide it with such information and evidence as it requires to enable it to determine whether or not the generator is entitled to any (and, if so, how many) ROCs.

9.17 Once the “declared renewable content” of the waste stream has been agreed Ofgem can require the generator to periodically thereafter verify the nature of the waste that the generator is continuing to burn. The generator will be required to notify Ofgem of any material change of circumstance that occurs at any time, for example, if the source of the waste that the generator was burning changed.

9.18 If Ofgem knows or has reasonable grounds to believe that a generator has knowingly or recklessly provided inaccurate information, it will be able to revoke any ROCs that have been issued in connection with that information or to withhold the issue of any ROCs that would otherwise be issued in reliance on that information. If that is not possible, Ofgem should be able to withhold/revoke any other ROCs claimed/held by the generator, to ensure that the generator does not profit from inaccurate information or evidence.

Composition Contracts

9.19 The majority of the respondents felt that the waste composition contracts should be the primary form of evidence used to determine the renewable content of mixed waste. Of those that suggested alternatives, the majority asked that Ofgem be given flexibility; that regular spot checks or audits should be included and that whichever method is put in place, it is balanced for effectiveness and cost. A few respondents felt that carbon 14 dating should be explicitly permitted. We do not feel that this is a suitably advanced technology to mandate its use in legislation and certainly not to the exclusion of other techniques. However, we believe that the use of carbon 14 and other innovative techniques will be facilitated by the changes we propose making to the ROO.

Determining the renewable content of fuels produced through anaerobic digestion, gasification or pyrolysis (ACTs)

9.20 Just over half of the respondents felt that the proposed approach was correct, however, there were consistent calls to remove the assumption that the residual char is 100% renewable and to instead base the composition calculation on the renewable content of the feedstock. We are persuaded by the consistent arguments that have been made. However, this does not indicate a move to using the feedstock to determine the renewable content of fuels. Instead, we are comfortable with operators wishing to reduce the assumed renewable content of the char, as long as they provide Ofgem with satisfactory evidence that this is indeed the case. We will work with Ofgem to develop further guidance to ensure the process is clear. Further evidence on the renewable content of char produced by ACTs would be useful to aid this work.

Chapter 10 - Mixed Fuel Scenarios

Summary of key points in Chapter 10

- The treatment of biodiesel has been clarified.
- 16 situations in which fuel is mixed to produce electricity have been explained in detail.
- Dry mass as a proxy method for energy content measurement for anaerobic digestion of mixed feedstocks has been retained.

10.1 The ROC regime is at its most complex when more than one type of fuel are used to generate electricity, this occurs when biomass or waste are used as part of the feedstock. The statutory consultation attempted to clarify the situation and succeeded in doing so, under most circumstances.

10.2 Respondents generally agreed with the summary of the mixed fuel scenarios which we provided in the statutory consultation. We therefore reproduce flowcharts from that document below for ease of reference. Respondents provided a small number of additional scenarios that were not covered in enough detail in the statutory consultation. These were: dual-fuel CHP; co-firing of gaseous fuels produced from anaerobic digestion (AD), gasification and pyrolysis; AD of mixed feedstocks; biodiesel and anaerobic digestion with CHP.

10.3 *Dual fuel CHP* was a concern raised by the water industry, which requested specific treatment of engines where they use fossil fuel to support combustion of a low calorific gas (such as sewage gas) and use 85 – 94% renewable fuel. This was a similar issue to respondents who are considering developing projects which would involve co-firing fuels produced by anaerobic digestion, gasification and pyrolysis. Anaerobic digestion of mixtures of sewage sludge and food waste were also raised by the water industry. Our responses to these issues are detailed in the Mixed Fuels section below.

10.4 Our treatment of biodiesel that is partly produced from fossil fuels is determined by the definition of fossil fuels within the Energy Act 2008. This excludes any fossil fuels from benefiting from the RO and includes in the definition of fossil fuels, fuels which are directly or indirectly derived from fossil fuels. As a consequence we do not believe that biodiesel partly produced from fossil fuels will be eligible for ROCs. Some commentators also doubt that biodiesel used in stationary engines produces a significant lifetime greenhouse gas saving over the current average emissions from fossil fuel generation in the UK.

10.5 We welcome the development of projects involving CHP with AD. However, our analysis of AD already assumes that some of the heat output is used to maintain the temperature of the digesters. Furthermore, given that AD will receive the highest level of support (2 ROCs/MWh) we do not propose to change the bands at this time to differentiate between those installations that use CHP and those that do not.

Diagram 1: Issuing ROCs on electricity from mixed fuel stream where the energy content is less than 90% biomass

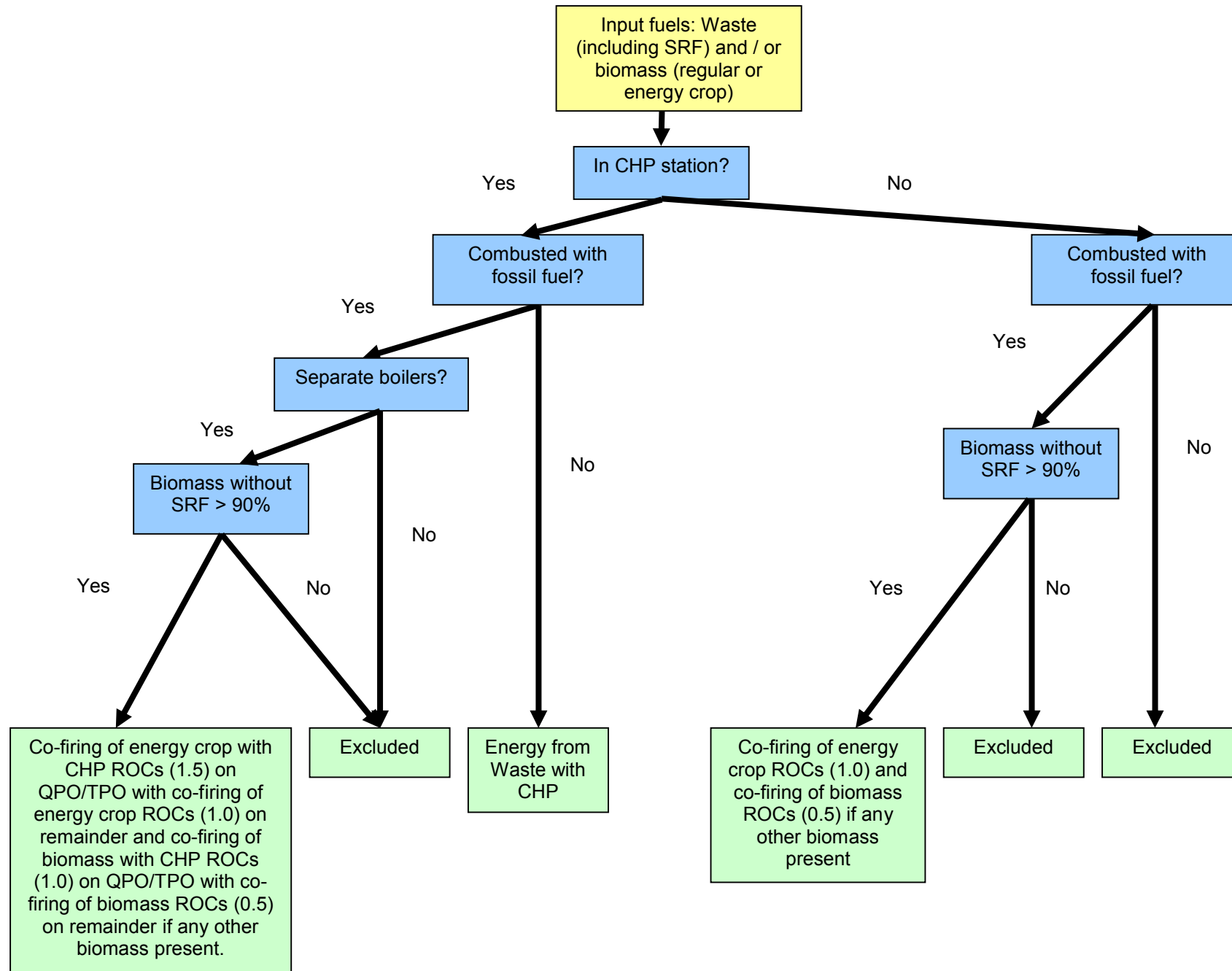
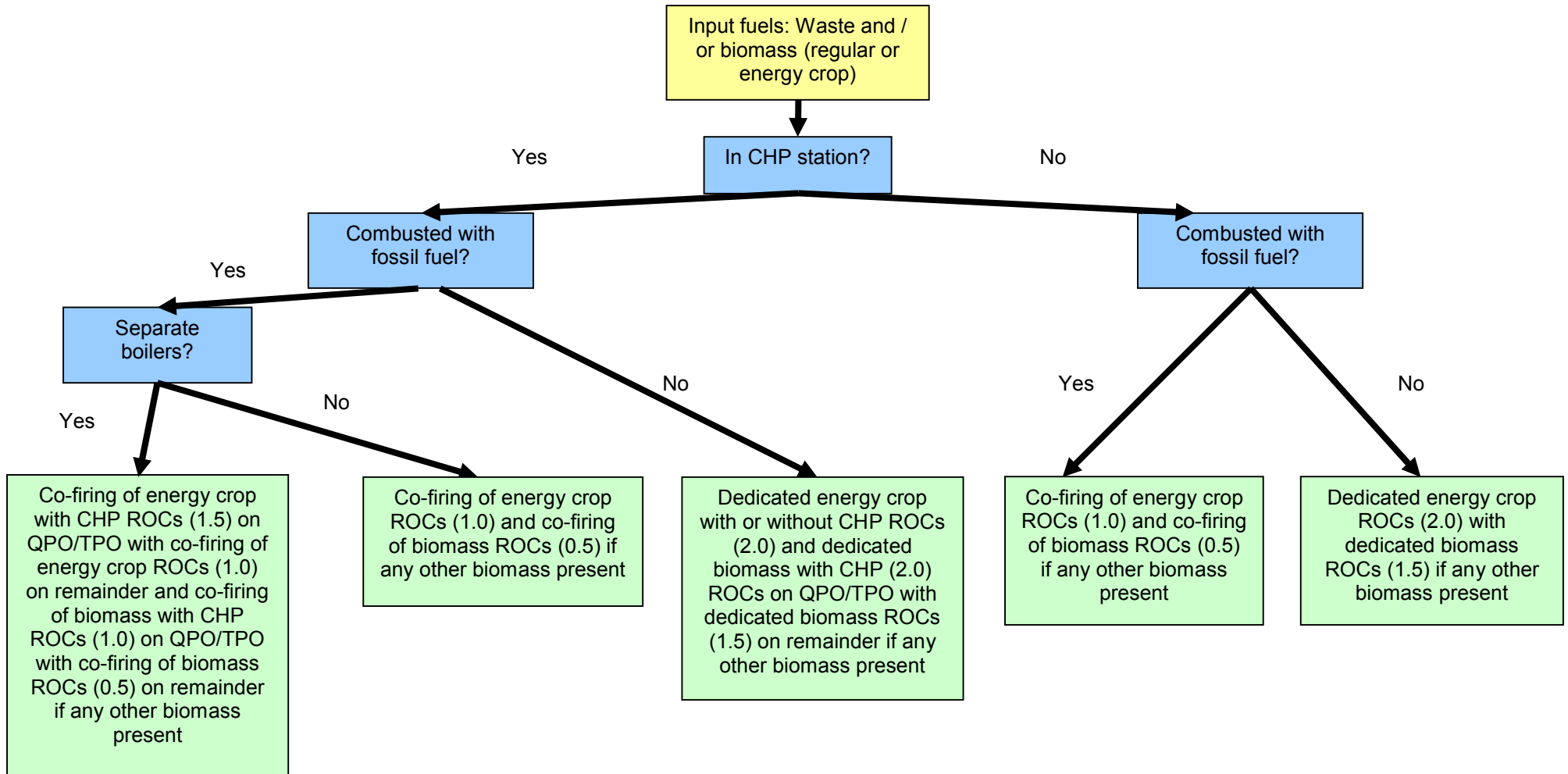


Diagram 2: Issuing ROCs on electricity from mixed fuel stream where the energy content is equal to or greater than 90% biomass



Dry Mass

10.6 We proposed using a dry mass proportion to determine how ROCs are allocated when sewage sludge is co-digested with other material. Several respondents were concerned that the dry mass method as a proxy for the measurement of the energy content of the gas would exclude fuels with a high liquid content. It should be noted that dry mass does not necessitate a solid feedstock, but that water is removed before samples are weighed to determine the relative proportions of the feedstocks.

10.7 No alternative measurement systems were proposed and so we will continue with the methodology detailed in the statutory consultation. Please note that these changes are not yet reflected in the draft ROO. We understand the industry's concerns and are currently investigating other proxies for measurement that would provide accurate results over a range of fuel types.

Mixed Fuels

10.8 The majority of respondents felt that our treatment of co-firing fuels produced through anaerobic digestion, gasification or pyrolysis was not correct. The only evidence of projects in the UK currently using this method of electricity generation were some sewage gas stations which use natural gas to compensate for the variable quality of the gas produced by AD of sewage sludge. However, there was evidence that some companies are actively considering projects which will take advantage of the increased efficiency of CCGT stations to burn gases produced by AD or gasification.

10.9 There was considerable divergence in what the best method would be: some felt that co-fired fuels should be treated the same irrespective of how they were made, while others felt that special arrangements should be in place for fuels produced through ACTs, as production using this method requires additional costs.

10.10 We have considered the options available. While we expect there to be some cost savings from the use of existing infrastructure such as existing gas turbines and grid connections, we accept that most of the costs will be the capital costs of the fuel production plant. We will, therefore, be implementing the following regime for ROC issue for the 16 mixed fuel situations detailed in the table below. Please note that only 8 of the 16 situations are shown on the table as explained in paragraph 10.11 below.

Case #	1	2	3	4	5	6	7	8
Input feedstock 1	Sewage	Sewage	Sewage	Sewage	Sewage	Sewage	Sewage	Sewage
Input feedstock 2	None	Waste	None	Waste	None	Waste	None	Waste
Co fired?	No	No	Yes	Yes	No	No	Yes	Yes
2 Bands?	No	Yes	No	Yes	No	Yes	No	Yes
ROC Band 1	Sewage Gas	Sewage Gas	Sewage Gas	Sewage Gas	Sewage Gas	Sewage Gas	Sewage Gas	Sewage Gas
ROC Band 2	N/A	Anaerobic Digestion	N/A	Anaerobic Digestion	N/A	Anaerobic Digestion	N/A	Anaerobic Digestion
ROC Level 1	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
ROC Level 2	N/A	2.00	N/A	2.00	N/A	2.00	N/A	2.00
Dry Mass Required?	No	Yes	No	Yes	No	Yes	No	Yes
CHP ?	No	No	No	No	Yes	Yes	Yes	Yes
ROC level at Max?	No	No	No	No	No	Yes	No	Yes

Table: Mixed Fuel situations

10.11 There are three general principles:

1. Fossil fuel use. Fossil fuel is permitted as part of the feedstock to ACTs on the condition that it forms part of a waste or biomass feedstock only. However, the RO does not support fossil fuel use and so the proportion of the electricity attributed to the fossil fuel will not be eligible for the issue of ROCs. This is the case in all the following situations but is specifically mentioned here for clarity.
2. Co-firing. Note that situations (c), (d), (g) and (h) below are co-firing, despite not being in co-firing bands. Despite this, the generating stations are still classified as co-firing and so the usual restrictions apply, for example a generating station co-firing waste that is not biomass or SRF will be exempt from all ROCs.
3. Landfill Gas. The responses to the consultation indicate that most of the issues relating to mixed fuel situations concern sewage gas, however, landfill gas is a similar band and should be treated in the same way as the sewage gas band, except that the ROC level for the landfill gas band is 0.25 ROC/MWh. For simplicity, in the following situations all references to sewage gas also apply to Landfill Gas at the lower rate of 0.25 ROC/MWh.

10.12 The situations are:

- (a) Sewage gas. This is the basic situation of the AD of sewage sludge to produce a gas that is then burned to generate electricity; such activity falls within the sewage gas band and is therefore eligible for 0.5 ROC/MWh.
- (b) AD of sewage and waste. Additional feedstock is added to situation (a), above, here the gas is a composite of the inputs which are eligible for differing amounts of ROC support and, in the absence of a suitable measurement system of the energy content of the gas, ROCs will be proportions based on the dry mass¹² of the input feedstocks. Sewage derived gas will receive 0.5 ROC/MWh (sewage gas band) and the waste derived gas will receive AD ROCs at a rate of 2 ROC/MWh (AD band).
- (c) Co-firing of sewage gas and fossil fuel. The co-firing bands specifically exclude sewage gas; hence, this situation falls into the sewage gas band and therefore gains ROCs at the rate of 0.5 ROC/MWh.
- (d) Co-firing of the syngas produced from AD of sewage and waste and fossil fuel. As in situation (c), above, the sewage gas component of the syngas can only gain ROCs at the rate of 0.5 ROC/MWh. However, the waste derived gas is eligible for ROCs at the AD band rate of 2 ROC/MWh. A dry mass measurement is required to attribute the correct proportion of ROCs.
- (e) Sewage gas with CHP. We assume that well-designed sewage gas stations already use at least some of the heat produced to support the anaerobic digestion process. Only sewage gas ROCs may be claimed (equal to 0.5 ROC/MWh).
- (f) AD of sewage and waste with CHP. The CHP version of situation (b). Here, as per the definitions of both the sewage gas and AD bands, both input feedstocks are at their maximum ROC level, and so the result is identical to

¹² Dry mass does not necessitate a solid feedstock, but that water is removed before samples are weighed to determine the relative proportions of the feedstocks.

situation (b). ROCs will be proportions based on the dry mass of the input feedstocks. Sewage derived gas is in the sewage gas band and will receive 0.5 ROC/MWh, while the waste derived gas will receive AD band ROCs at a rate of 2 ROCs/MWh.

- (g) Co-firing of sewage gas and fossil fuel with CHP. Given the exclusion of sewage from the co-firing and CHP bands, this situation will only receive 0.5 ROC/MWh.
- (h) Co-firing of the syngas produced from AD of sewage and waste and fossil fuel with CHP. Situation (d) with CHP. In this situation, the ROC levels of both feedstocks (the sewage gas band and the AD band) are at their maximum and so this situation is the same as situation (d). A dry mass calculation is required to apportion 0.5 ROCs to the sewage gas derived syngas and 2 ROCs to the waste feedstock derived syngas.

Chapter 11 - Solid Recovered Fuel (SRF)

Summary of key points in Chapter 11

- Government will introduce a minimum standard for SRF to avoid untreated waste receiving the benefits of neutrality for SRF and Enhanced Capital Allowance (ECAs) that are available for SRF combustion equipment.
- Government will continue to look at whether neutrality can be extended beyond stations which co-fire biomass and fossil fuel.

11.1 The statutory consultation proposed changes to the treatment of SRF under the RO to remove a barrier to the use of waste for energy recovery. Government proposed to remove the current restriction whereby ROCs cannot be claimed for eligible biomass when co-fired in a fossil fuel power station alongside SRF. A new definition of SRF was suggested to aid this purpose and consultees were requested to comment on the suitability of the new definition. Following requests from industry to remove barriers to the use of waste for energy recovery, the consultation set out proposals to remove the current restriction whereby ROCs cannot be claimed for eligible biomass when co-fired in a fossil fuel power station alongside SRF.

11.2 Of the respondents who answered this question, two thirds agreed with the definition of SRF laid out in the statutory consultation. Of those that did not consider the definition suitable, a significant minority argued that there was no reason to distinguish between waste which had been processed and unsorted municipal waste.

11.3 Government has decided to introduce a minimum standard for SRF to avoid the benefits of Enhanced Capital Allowances (ECAs) for SRF combustion equipment and neutrality for SRF from being available to untreated waste which has not undergone the processes envisaged in the waste hierarchy.

11.4 Whilst it is true that Government has expressed no preference for the combustion of SRF over that of black bag waste in theory (although it must be borne in mind that SRF is much more likely to be burned in a CHP process), in practice it is necessary to distinguish between them because we are concerned that extending neutrality to all wastes and / or beyond stations which co-fire biomass and fossil fuel could lead to support for the combustion of energy from waste without CHP through the separation and recombination of the fossil fuel and biomass components of waste.

11.5 In the longer term, Government will look to examine ways in which this risk can be mitigated in order to consider whether the stated objection to neutrality for all waste, and extending neutrality beyond stations which co-fire biomass and fossil fuel, can be overcome.

SECTION 4: TECHNICAL AND ADMINISTRATIVE CHANGES

Chapter 12 - Funding Ofgem's Administration of the RO

Summary of key points in Chapter 12

- The costs for Ofgem's Administration of the RO will be met from the buyout fund.
- Where there is insufficient money in the buyout fund the outstanding costs will be met by DECC and the Devolved Administrations.
- It will not be possible for the new funding mechanism to trigger mutualisation or for mutualisation payments to be used for administration costs.
- The buyout fund will only be used to fund the administration of the RO and not other environmental programmes.

12.1 The statutory consultation set out proposals to allow Ofgem's costs for administering the RO to be removed from the buyout fund. The costs are currently met through licence fees charged to the gas and electricity network operators. The statutory consultation recognised that the proposed change would result in a small reduction in the amount of money recycled to those who presented ROCs. However, the proposal also recognised that it would be more appropriate for the costs to be met by those who participate in the RO rather than the network operators who do not.

12.2 The majority of responses to the statutory consultation agreed that this was a more appropriate approach but expressed concern about the reduction in the recycle payments that would result and process for controlling Ofgem's costs.

12.3 Ofgem has estimated that if its administration costs were met from the buyout fund this would reduce ROC values by approximately £0.07/MWh or 0.13%.

12.4 With regard to controlling costs, Ofgem already has a rigorous method for tracking and controlling costs in place which will also be applied to the new funding mechanism. In-year controls are built into Ofgem's financial management regime, ensuring potential overspends are identified at an early stage and appropriate action is taken. In addition, Ofgem holds an annual corporate planning round, in which budgets are set following significant internal scrutiny and full external consultation.

12.5 Whilst Government accepts the concern expressed about the impact on recycle values, we believe that the reduction in value, as set out above, is negligible. We also believe the appropriate processes are already in place to ensure Ofgem's costs are subject to the right scrutiny and controls. This includes opportunity for industry input through the annual consultation process. The Government will therefore be implementing this proposal. Once the new funding mechanism is introduced there will be a corresponding decrease in the monies currently used to fund Ofgem's administration of the RO.

How the funding process will work

12.6 The first time the buyout fund will be used in this way will be in 2010, the year after the introduction of a reformed RO. This means that for a reformed RO introduced on 1st April 2009, Ofgem will consult on its corporate plan and indicative budget for the following financial year in December 2009; including details on the costs of administering the RO. This consultation will close in January 2010 and Ofgem's corporate plan and budget will be published in March 2010. Ofgem will then deduct the costs associated with its administration of the RO from the money which is paid into the buyout fund in September 2010.

12.7 The same process will continue on a rolling basis and allows Ofgem to recover the costs in the same financial year in which they occur, although the buyout fund they would take their costs from relates to the Obligation Period for the previous year i.e. in the example above the buyout fund would be for the Obligation Period 2009/10 but the costs being recovered would be for the Obligation Period currently running which would be 2010/11.

12.8 Where there is insufficient money in the buyout fund Ofgem will be able to remove funds from the late payment fund. Where there is insufficient money in both the buyout fund and late payment fund the remaining costs will be met by DECC for England and Wales and the Devolved Administrations for their respective Obligations.

12.9 Money removed from the buyout fund for the purpose of meeting Ofgem's administrative costs will not be counted towards a shortfall which could trigger mutualisation. In circumstances where mutualisation is triggered due to a relevant shortfall, mutualisation payments cannot be used to cover Ofgem's administrative costs.

12.10 The buyout fund will only be used to meet the costs of Ofgem's administration of the RO. It will not be used to meet the costs of any of the other environmental programmes which Ofgem administer such as REGOs and LECs.

Chapter 13 - Late Payments Fund

Summary of key points in Chapter 13

- Where the late payment fund is £50,000 or less it will be rolled forward and redistributed with the following year's buyout fund.
- Interest will accrue on any late payments which are rolled forward and then redistributed alongside the fund.
- Ofgem will notify all licensed suppliers if the late payment fund is to be rolled forward.

13.1 The statutory consultation set out a proposal to reduce the transaction costs associated with the late payment fund by allowing the fund to be rolled forward and recycled with the following year's buyout fund if it did not reach a specific threshold.

13.2 All responses which expressed a view on this issue agreed with this proposal. In addition a large majority agreed that the threshold at which the fund would be recycled should be set at £50,000.

13.3 The Government therefore intends to take forward this proposal. This will mean that if the late payment fund is £50,000 or less it will be rolled forward and recycled with the following year's buyout fund. Payments will be recycled in proportion to the ROCs presented for the Obligation Period just ended rather than the buy-out fund for the previous year to which the late payments actually relate. Interest will be accrued on the money held in the late payment fund and redistributed along with the fund. Where the late payment fund is to be rolled forward, Ofgem will publish a press notice setting out the details.

Chapter 14 - Private Wire

Summary of key points in Chapter 14

- Expressly includes private wire networks within permitted ways.
- Sets out criteria for private wire networks, e.g. 10 MW threshold and not over publicly licensed network such as a local Distribution Network Operator (DNO) or National Grid.

14.1 In April 2007, the ROO was amended to remove the need for generators to enter into sell and buy-back agreements in order to claim ROCs for eligible on-site use. Similarly we are now introducing a specific permitted way into the Order to ensure simplification of the contractual arrangements currently necessary so that generators supplying electricity over private wire networks – e.g. unlicensed supply – to a third party can obtain ROCs.

14.2 Private wire networks may exist in a number of configurations and there is little evidence as to how they are arranged in practice. As a consequence it is hard to produce a detailed definition in legislation. The common characteristics we have identified are that (a) electricity from renewable sources is being generated by a generator who does not hold an electricity supply licence (as he is exempt from the requirement to hold one); (b) that the electricity is being supplied either (i) directly to a customer or (ii) to an intermediary who also does not hold an electricity supply licence (and who also has an exemption from doing so) and that intermediary in turn supplies electricity directly to customers.

14.3 Powers in the Energy Act 2008 allow us to limit:

- the size of the generating station;
- the precise circumstances in which electricity is being supplied; and
- the nature of the system over which the electricity is distributed or transmitted.

14.4 Following the statutory consultation we have decided to introduce a threshold limiting this permitted way to unlicensed networks which are less than 10 MW. This is based on evidence from respondents suggesting that over this size there are physical limitations on the private wire lines which will not allow developments much beyond this level.

14.5 In the statutory consultation we also asked whether we should prevent a private wire from operating over the National Grid. Responses were mixed but there seemed to be a general recognition that a private wire network would operate over a clearly private asset, e.g. a privately owned wire connecting the generators to the customer, and that this should not use public networks such as the National Grid or a local Distribution Network Operator (DNO). We will therefore stipulate that a private wire is one providing a direct, privately owned connection between the customer and the generator.

14.6 Those generators looking to supply over a private wire network will also need to ensure that they comply with the Electricity (Class Exemptions from the requirement for a Licence) Order 2001 S.I. 2001/3270 which sets limits on unlicensed supply of electricity.

14.7 The introduction of a feed-in tariff is likely to have implications for some private wire networks operating within the RO where they are below a certain size. This will be addressed as part of the ongoing work to develop a feed-in tariff for small scale generation.

Chapter 15 – Microgeneration (50 kW and under) – Simplification of Administration

Summary of key points in Chapter 15

- Microgenerators will be able to take annual meter readings up to 2 months following the end of the obligation period.
- The form notifying Ofgem that a generator wishes to use an agent can be sent to Ofgem either by the generator or their agent.
- There will be no change to the current arrangements regarding microgenerators ability to switch agents during an obligation period.
- A decision on developing a code of practice for agents will now be delayed to allow the role of agents to be assessed in the context of the introduction of a feed-in tariff.

For the purposes of the RO microgenerators are defined as 50 kW and under DNC. The sections below relate to arrangements for this size of generator.

Metering Arrangements

15.1 In the statutory consultation we proposed that microgenerators who make annual ROC claims should be allowed to read their meters at any point during the first two months following the end of an Obligation Period. The meter readings would still need to be submitted within this two month window as happens under the current scheme. Ofgem would then pro-rata the meter reading back to the end of the relevant Obligation Period. This would provide significantly more flexibility than the current arrangement which only allows microgenerators to take their meter reading within 5 days either side of the end of an Obligation Period.

15.2 This proposal was supported by the large majority of responses. However, some concern was expressed that the pro-rata process would not take account of different weather conditions for that period of the year which could affect the amount of generation the ROCs are issued on. In general, although this was raised as an issue, it was considered that the benefit of the change in terms of increased flexibility outweighed any potential disadvantage created by the pro-rata process.

15.3 The Government will therefore be implementing this change.

Clarifying the position on microgenerators notifying Ofgem that they wish to use an agent

15.4 The statutory consultation proposed a small change to the legislation which would allow the form which notifies Ofgem that a generator will be using an agent to be sent by either the generator or their agent. Ofgem would then send an acknowledgement back to both the generator and agent confirming that the form had been received; preventing either generator or agent from submitting a form without the knowledge of the other party. There was strong agreement that this change should be made and it will be implemented from 1st April 2009.

Allow microgenerators to switch agents during an Obligation Period.

15.5 The statutory consultation included a proposal to amend the ROO to allow microgenerators to switch agents during an Obligation Period. The proposal set out that there would be no limit on the number of times a generator could switch agents, but to reduce administrative costs the ROCs would only be issued to the agent representing the generators at the point at which claim data was submitted. It would therefore be for the generator and relevant agents to apportion the ROCs or any financial benefit between themselves.

15.6 The majority of respondents agreed that there should be no limit to the number of times a generator could switch agents. However, a number of respondents expressed concern that the agent who submitted the claim data would receive all the ROCs for that Obligation Period, and it would be difficult for past agents to put in place appropriate agreements to obtain their share of the ROCs. There were concerns that this could risk introducing bad practice and so ultimately be a disincentive for people to act as agents.

15.7 As an alternative, some respondents proposed that Ofgem should apportion the ROCs among agents on a pro-rata basis. Whilst this would address some of the concerns set out above, it would make the administration system significantly more complex and therefore prone to error. In addition, incorporating such a process into Ofgem's IT system would incur a significant additional cost to Ofgem.

15.8 As with all changes to the RO, it is important to ensure that the cost of change is proportionate to the benefit. With the change to the funding arrangements for the administration of the RO - where costs will be funded directly from the buy-out fund - this is increasingly important. This view was set out by some respondents who, whilst supporting the principle of allowing generators to switch agents during an Obligation Period, added the qualification that this should not incur a disproportionate cost to Ofgem. Some respondents also pointed out that there is currently limited demand for mid-year switching of agents.

15.9 Since the publication of the statutory consultation in June the Government has announced its intention to introduce a feed-in tariff for generating stations up to 5 MW. Even respondents who were strongly supportive of allowing switching during Obligation Periods felt that, were an alternative to the RO to be introduced for microgeneration in the near future, it would make sense to retain the existing arrangements.

15.10 The Government has therefore decided to retain the existing arrangements.

Introduction of a Voluntary Code of Practice for Agents and Allowing Agents to Accredite Microgenerators.

15.11 The statutory consultation sought views on the introduction of a voluntary code of practice for agents acting on behalf of small generators; developed with the input of agents, Ofgem, DECC and other interested parties. The statutory consultation also considered, subject to the appropriate code of practice being in

place, whether there was any scope for agents to take on a role for accrediting microgenerators.

15.12 There was strong support for the introduction of a voluntary code of practice. However, since the publication of the statutory consultation the Government has made provision in the Energy Act 2008 for the introduction of a feed-in tariff for generators up to a maximum of 5 MW in capacity.

15.13 The introduction of a feed-in tariff is likely to have an impact on the role of agents under the RO. We would not want to ask industry representatives to undertake work to develop a code of practice ahead of the consultation on the details of the feed-in tariff. We will therefore delay the development of this proposal any further until the outcome of the consultation on the feed-in tariff due to be held in Summer 2009.

Chapter 16 – Changing Metering Requirements in Article 16(9a)

Summary of key points in Chapter 16

- Government will make a small technical change to simplify the existing metering requirements.

16.1 The statutory consultation set out a small technical proposal to simplify the existing metering requirements for all generating stations. This proposal concerns Article 16 (9A) of the current ROO which necessitates that meters are approved by Ofgem and certified *in situ*. They are then required to be removed once the meter certification expires. The Government believes that this is onerous on generators, who can incur large expenses in changing the meter; it is also difficult for Ofgem to monitor and enforce.

16.2 There were no comments on this proposal. The Government will therefore make a change to the legislation to allow generators to provide evidence to Ofgem that the meter has been calibrated prior to use without the need for *in situ* certification, and will remove the requirement to remove the meter once the meter certification expires.

Annex A – Respondents

A&P Ports & Properties
Association of Electricity Producers
Agricultural Industries Confederation
Anglian Water
British Contract Furnishing & Design Association
Beneco Energy
Biffa Waste Services Ltd
Biomass Industrial Crops Ltd (Bical)
Biossence Limited
BizzEnergy Limited
Blue-ng Limited
Border Precision Ltd
Brian Shingler
British Energy
British Hydro Association
British Sugar
British Wind Energy Association
Centrica
Clive Winterbourne
Combined Heat and Power Association
ConFor (Confederation of Forest Industries)
David Curtis
DCA Consultants Ltd
Derwent Hydroelectric Power Ltd
DONG Energy
Drax Power Limited
E.ON
East Midlands Airport
EDF Energy
EJC Chapman
ENER-G
ENERGOS Limited
Environmental KTN
Environmental Services Association
Esk Valley Community Energy Group
Evonik New Energies UK Ltd
Fife Energy Limited
Fred.Olsen Renewables
Future Energy Yorkshire
GEM Operations Ltd
Geothermal Energy
Good Energy
GreenerPlanet
Green Wold Energy Ltd
Hazel Hendley
Helius Energy plc
Herefordshire Hydro Group
Highlands and Islands Enterprise
Highmead Consultants
INEOS Chlor
Infinis Limited
InterGen (UK) Ltd
Interserve Project Services Ltd
J N Bentley Ltd
Keld Energy Ltd
KTI Energy Limited
Land Securities Trillium
Lesley Carson (Energy Developments (Management) Ltd; Hydro Energy Developments Ltd; Deanston Hydro Ltd; SHP Projects Ltd; Alba Energy Ltd)
London Analytics Limited
Lowwood Products Co Ltd.
Lullington Mill
Macquarie Capital Funds
Mainstream Renewable Power
Mendip Power Group
Mickley Hydro Ltd
Micropower Council
Natural England
Northumbrian Water Ltd
Novera Energy plc
Ofgem
Optimum Energy Ltd
PDM Group
Pete Austin
Premier Energy Limited
Progressive Energy Limited
Prospect
Renewables Advisory Board
Rajan Russell
REA
Renewable Power Systems
Richard Drover
RWE npower
Scottish and Southern Energy
Scottish Water
ScottishPower
Sembcorp
Shanks.Waste Solutions
Sheffield Community Renewables
Sita UK

South Somerset Hydropower Group
Southeast Power Engineering
Stour and Vale Hydro Group
Tate & Lyle
Thames Water
The National Non-Food Crops Centre
Tim Copeland
UKRA - UK Rendering Association
United Utilities
UPM-Kymmene (UK) Ltd
Veolia Environmental Services (UK)
Plc
Viridian Power and Energy
Viridor Waste Management Limited
Water Power Enterprises
Water UK
Watt-Knots Limited
Wavegen
Welsh Power Group Limited
Wind Direct Limited
Wood Panel Industries Federation
WWF-UK
Yorkshire Water
Yorwaste

Annex B – Glossary of Terms

ACT – Advanced conversion technologies
AD – anaerobic digestion
BEAT₂ – Biomass Environmental Assessment Tool
CHP – combined heat and power
DNC – declared net capacity
ECA – Enhanced Capital Allowance
EfW – Energy from Waste
GBEP – Global Bio-energy Partnership
GQCHP – good quality combined heat and power
GW - gigawatt
kW – kilowatt
kWh – kilowatt hour
LATS – Landfill Allowance Trading Scheme
LCA – Life cycle analysis
LEC – Levy Exemption Certificate
MW - megawatt
MWh – megawatt hour
NIRO – Northern Ireland Renewables Obligation
RAB – Renewables Advisory Board
REGO – Renewable Energy Guarantee of Origin
RES – Renewable Energy Strategy
RO – Renewables Obligation
ROC – Renewables Obligation Certificate
ROO – Renewables Obligation Order
ROS – Renewables Obligation Scotland
SRF – Solid recovered fuel
WID – Waste Incineration Directive

Annex C - Sustainability Reporting – List of Environmental Quality Assurance Schemes

Assured Combinable Crops Scheme (ACCS)
Assured Produce Scheme
Basel Criteria for responsible soy production
Central Point of Expertise on Timber Procurement (CPET)
EFSIS/FABBL Farm Assurance Scheme (Combinable Crops)
Forest Stewardship Council (FSC)
Genesis Quality Assurance (GQA) Scheme
GLOBALGAP
Irish Grain Assurance Scheme
Laborelec Sustainability Certification
Linking Environment and Farming (LEAF) Marque
Northern Ireland Farm Quality Assured Cereals Scheme (FQACS)
Roundtable on Sustainable Biofuels (RSB)
Roundtable on Sustainable Palm Oil (RSPO)
Scottish Quality Cereals Scheme
Soil Association Farm Assurance Scheme
Sustainable Agriculture Network/Rainforest Alliance (SAN/RA)
UK Forestry Standard/UK Woodland Assurance Standard (UKWAS)

Annex D – Gasification and Pyrolysis Definitions

Advanced gasification

Electricity generated from a gaseous fuel which is produced from waste or biomass by means of gasification, and has a gross calorific value when measured at 25 degrees Celsius and 0.1 megapascals at the inlet to the generating station of at least 4 megajoules per metre cubed.

Advanced pyrolysis

Electricity generated from a liquid or gaseous fuel which is produced from waste or biomass by means of pyrolysis, and

(a) in the case of a gaseous fuel, has a gross calorific value when measured at 25 degrees Celsius and 0.1 megapascals at the inlet to the generating station of at least 4 megajoules per metre cubed, and

(b) in the case of a liquid fuel, has a gross calorific value when measured at 25 degrees Celsius and 0.1 megapascals at the inlet to the generating station of at least 10 megajoules per kilogram.

Pre-banded gasification

The appropriate percentage of electricity generated by a relevant generating station from a gaseous fuel which is produced from waste or biomass by means of gasification, and has a gross calorific value when measured at 25 degrees Celsius and 0.1 megapascals at the inlet to the generating station of less than 2 megajoules per metre cubed.

Pre-banded pyrolysis

The appropriate percentage of electricity generated by a relevant generating station from a gaseous fuel which is produced from waste or biomass by means of pyrolysis, and has a gross calorific value when measured at 25 degrees Celsius and 0.1 megapascals at the inlet to the generating station of less than 2 megajoules per metre cubed.

Standard gasification

Electricity generated from a gaseous fuel which is produced from waste or biomass by means of gasification, and has a gross calorific value when measured at 25 degrees Celsius and 0.1 megapascals at the inlet to the generating station which is at least 2 megajoules per metre cubed but is less than 4 megajoules per metre cubed.

Standard pyrolysis

Electricity generated from a gaseous fuel which is produced from waste or biomass by means of pyrolysis, and has a gross calorific value when measured at 25 degrees Celsius and 0.1 megapascals at the inlet to the generating station which is at least 2 megajoules per metre cubed but is less than 4 megajoules per metre cubed.

“appropriate percentage”, in relation to electricity generated by means of the generation types entitled “Pre-banded gasification” or “Pre-banded pyrolysis”, means

—

- (a) where at the time the electricity is generated the generating station’s total installed capacity is no greater than its original capacity, 100%;
- (b) where at the time the electricity is generated the generating station’s total installed capacity is greater than its original capacity, the percentage of electricity generated by the station which, in the Authority’s [opinion], is generated both –
 - (i) using the generating station’s original capacity, and
 - (ii) from the relevant fuel;

“original capacity”, in relation to a relevant generating station, means the total installed capacity of the station as at 31st March 2009 or the date on which it was accredited, whichever is the later;

“relevant fuel” means –

- (a) in relation to the determination of the “appropriate percentage” for the purpose of calculating the amount of electricity produced by a relevant generating station by the generation type entitled “Pre-banded gasification”, the gaseous fuel produced from waste or biomass by means of gasification, and
- (b) in relation to the determination of the “appropriate percentage” for the purpose of calculating the amount of electricity produced by a relevant generating station by the generation type entitled “Pre-banded pyrolysis”, the gaseous fuel produced from waste or biomass by means of pyrolysis;

“relevant generating station” means a generating station—

- (a) which is accredited on or before 31st March 2011,
- (b) which does not cease to be accredited at any time after 31st March 2011, and
- (c) if it is not accredited on or before 31st March 2009, which receives preliminary accreditation on or before 31st March 2009;

Annex E: Analysis on Deeming the Fossil Fuel Fraction of Waste

	Biomass %	GCV (MJ/kg)	Unsorted waste			Scenario A ¹³			Scenario B ¹⁴		
			% waste	Total GCV	Biomass GCV	% waste	Total GCV	Biomass GCV	% waste	Total GCV	Biomass GCV
Paper and card	100	12.6	18.0	2268.0	2268.0	2.7	340.2	340.2	9.0	1134.0	1134.0
Plastic film	0	23.6	2.7	637.2	0.0	9.5	2249.3	0.0	8.6	2039.0	0.0
Dense plastic	0	26.7	3.5	934.5	0.0	1.4	373.8	0.0	2.1	560.7	0.0
Textiles	50	15.9	2.4	381.6	190.8	1.2	190.8	95.4	1.4	229.0	114.5
Absorbent hygiene products	50	8.0	2.2	176.0	88.0	7.8	621.3	310.6	7.0	563.2	281.6
Wood	100	18.3	3.2	585.6	585.6	1.6	292.8	292.8	2.4	439.2	439.2
Other combustibles	50	15.6	1.5	234.0	117.0	5.3	826.0	413.0	4.8	748.8	374.4
Non-combustibles	0	2.8	12.3	344.4	0.0	43.4	1215.7	0.0	39.4	1102.1	0.0
Glass	0	1.5	6.6	99.0	0.0	3.3	49.5	0.0	3.3	49.5	0.0
Ferrous metal	0	0.0	1.6	0.0	0.0	0.8	0.0	0.0	0.8	0.0	0.0
Non-ferrous metal	0	0.0	0.4	0.0	0.0	0.2	0.0	0.0	0.2	0.0	0.0
Kitchen waste	100	5.3	17.2	911.6	911.6	4.3	227.9	227.9	4.3	227.9	227.9
Green waste	100	6.5	19.2	1248.0	1248.0	1.9	124.8	124.8	1.9	124.8	124.8
Fines	50	4.8	4.0	192.0	96.0	14.1	677.8	338.9	12.8	614.4	307.2
WEEE	0	7.6	4.5	342.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Hazardous household waste	0	0.0	0.6	0.0	0.0	2.1	0.0	0.0	1.9	0.0	0.0
TOTAL			99.9	8353.9	5505.0	99.7	7189.9	2143.6	100.0	7832.6	3003.6
Biomass GCV					66%			30%			38%

Base data from:

Carbon Balances and Energy Impacts of the Management of UK Wastes: Table 3.2 (GCV); Table 1.24 (municipal waste composition England), Table B1.2 (recycling and recovery upper limits - for Scenario A), Impact of EfW and recycling policy on UK GHG emissions: Table 3.1 (% biodegradability)

¹³ Scenario A: Removed 85% paper/card, 75% food, 90% green, 50% wood, textiles, glass & metals, 60% dense plastic, WEEE

¹⁴ Scenario B: Removed 50% paper/card, 75% food, 90% green, 25% wood, 40% textiles & dense plastic, 50% glass & metals, WEEE

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