



Department  
for Transport

# Consultation on proposed amendments to the Renewable Transport Fuel Obligations Order 2007: Government Response

November 2014

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# Executive summary

## Summary of the consultation

1. The Renewable Transport Fuel Obligation (RTFO) requires suppliers of fuel for use in road transport and certain other mobile machinery<sup>1</sup> to ensure that a proportion of the fuel they supply comes from renewable sources.
2. This consultation proposed changes to the Renewable Transport Fuel Obligations Order 2007 ("RTFO Order 2007") which were intended to apply from 15 April 2015.
3. The proposed changes on which we sought views were:
  - a. increasing the reward for certain renewable gaseous fuels to reflect their higher energy content relative to the equivalent volume of liquid biofuels;
  - b. aligning the treatment of a particular type of biodiesel;
  - c. clarifying certain powers of the RTFO Administrator to require information from fuel suppliers; and
  - d. providing that the RTFO Administrator can round up or round down in relation to partial amounts of fuel when determining the volume of renewable fuel eligible for Renewable Transport Fuel Certificates (RTFCs).
4. In addition to the changes listed in paragraph 3 above we also sought views on the possibility of including synthetic fuels produced using renewable electricity in the RTFO at a later date.
5. The consultation document was published on the Government's website on the 23rd July 2014. It ran for five weeks and closed on the 27th August 2014.

## Consultation questions

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<sup>1</sup> Including agricultural and forestry tractors, inland waterway vessel and recreational craft when not at sea.

**Table A. Questions included in the consultation**

No.	Question
<b>1. Renewable gaseous fuels</b>	
1a.	Do you agree with the proposed change in the allocation of RTFCs for gaseous fuels based on their energy content?
1b.	Do you have any comments on our proposed methodology for calculating the implicit energy content of an RTFC?
1c.	Do you have any other comments on this proposal?
Clarification note	Do you have any comments on the clarification note explaining how gaseous fuels may count towards a supplier's potential obligation?
<b>2. Synthetic fuels from renewable electricity</b>	
2a.	Do you agree that we should amend the RTFO to allow synthetic fuels to be eligible for support?
2b.	Do you agree the only two inputs that should be allowed in the production of synthetic fuels should be carbon dioxide and hydrogen? If not, what other inputs should be included and why?
2c.	Do you agree that synthetic fuels should receive two RTFCs per litre of fuel?
2d.	Do you agree with our proposal for proving whether electricity used to produce synthetic fuel is renewable? Are there any other sources of evidence that should be considered?
2e.	Do you agree that we should limit the sources of carbon dioxide that can be used in the production of synthetic fuel? Do you have any comments on the sources of carbon dioxide that we have chosen?

2f.	Do you agree with our proposal for fuel that has been produced using a mixture of renewable and non-renewable electricity?
2g.	Do you have any comments on how the RED methodology for determining the lifecycle emissions of renewable fuels might need to be adapted for synthetic fuels?
2h.	Do you have any other comments on this proposal?
<b>3. Alignment of support for biodiesel</b>	
3a.	Do you agree with the proposal to award HVO one RTFC per litre?
3b.	Do you have any other comments on this proposal?
<b>4. Clarification on the powers to request information from suppliers</b>	
4a.	Do you agree with the proposed amendment of Article 13 to clarify the powers to request information from suppliers?
<b>5. Rounding of certificates</b>	
5a.	Do you agree with the proposal to put beyond doubt that the Administrator can apply conventional mathematical rounding where part litres of renewable fuel are reported?
<b>6. Draft cost benefit analysis</b>	
6a.	Do you have any comments on the analysis of costs and benefits in Annex A?

## Responses received

6. The Department received 28 responses in total. Respondents were broadly categorised into ten main groups. They were:

Table B	
Group	No. of responses
Small to medium enterprise (up to 50 employees)	2
Large company	16
Representative organisation	6
Trade union	0
Interest group	0
Local Government	0
Central Government	0
Police	0
Member of the public	0
Other	4
<b>Total</b>	<b>28</b>

## Background

7. This consultation on proposed amendments to the RTFO Order 2007 followed a Call for Evidence on Advanced Fuels<sup>2</sup> which ran from 12 December 2013 to 21 February 2014, and a consultation on the draft post-implementation review<sup>3</sup> of the RTFO which ran from 16 December to 7 February 2014, both of which the Government responded to in April 2014<sup>4</sup>.
8. The post-implementation review noted the achievements made by the biofuel industry to date, which has delivered both significant increases in production capacity and reductions in carbon emissions since the RTFO was introduced in 2008.
9. It remains the Government's view that low-carbon fuels are critical to the future of the transport sector, and that some

<sup>2</sup> <https://www.gov.uk/government/consultations/advanced-fuels-call-for-evidence>

<sup>3</sup> <https://www.gov.uk/government/consultations/renewable-transport-fuel-obligation-a-draft-post-implementation-review>

<sup>4</sup> The Government Response is available on the Government's website at: [https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/307129/joint-government-response.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/307129/joint-government-response.pdf)

form of Government support will be necessary to bring advanced fuels to market.

## General responses

10. Overall there was broad agreement that the Government should make the amendments proposed in the consultation.
11. Proposals to increase incentives for renewable gaseous fuels have generated the most comments.
12. A few biofuel suppliers raised wider concerns over the consistency of offering increased incentives for renewable gaseous fuels while the obligation level for the supply of biofuels set in the RTFO Order 2007 is not altered, pending EU agreement on measures to address indirect land use change (ILUC).
13. Whilst respondents widely agreed that the principle of rewarding renewable gaseous fuels to reflect their higher energy content relative to the equivalent volume of liquid biofuels was correct, as explained in section 1, a number of alternative methodologies were suggested to calculate this increase in incentive. Some respondents also questioned why liquid renewable biofuels were not also being rewarded to reflect their energy content as part of the proposed amendments.
14. Respondents largely agreed that the RTFO Order 2007 should be amended to allow synthetic fuels to be eligible for RTFCs.
15. Some of those responding to the proposals to bring synthetic fuels within the RTFO expressed concern that these changes should be made as part of the amendments proposed for 2015. However, the majority recognised the need to continue to develop the evidence base on which to further develop the policy, in particular to clearly define what fuel types and raw materials are covered, how greenhouse gas reductions would be calculated, and other criteria to assure sustainability.

## Government response

16. The Government would like to thank all those who responded to the consultation.
17. The Government's starting position for the proposed amendments is that until discussions are concluded at EU



level on measures to address ILUC, we do not believe it would be beneficial to revise significantly how the RTFO, and the market for its certificates, operate. Until discussions are concluded it is unclear what the UK may be required to deliver under agreed European targets, so any significant changes made now to the UK scheme might need to be reversed or amended at a later date. Renewable gaseous fuels make up 0.15% of renewable transport fuels: these are predominantly generated from waste products so are unlikely to be significantly affected by measures agreed to address ILUC, which is why changes are being proposed for gaseous fuels but not liquid biofuels.

- 18.** Liquid biofuels currently make up 99.85% of renewable fuel supplied under the RTFO and that share is unlikely to diminish significantly as a result of the proposed amendments. A switch to reward liquid biofuels to reflect energy content would have a significant impact on the comparative incentives provided for ethanol and biodiesel, and therefore on the market for RTFCs.
- 19.** We will use the valuable input received on synthetic fuels to develop the evidence base before potentially including synthetic fuels produced using renewable electricity in the RTFO. Any legislative changes in this area will be considered at a later date.
- 20.** We will also be considering further some of the wider questions raised by respondents, such as how the UK meets its 2020 target under the Renewable Energy Directive (RED) and how to incentivise low carbon fuels beyond that point, in stakeholder workshops. These will include a wide range of experts from industry and non-government organisations.
- 21.** The Government may now introduce legislation which:
  - a. rewards certain renewable gaseous fuels on their energy content;
  - b. aligns the treatment of a particular type of biodiesel;
  - c. clarifies certain powers of the RTFO Administrator to require information; and

d. provides that the RTFO Administrator can apply mathematical rounding<sup>5</sup> when issuing Renewable Transport Fuel Certificates (RTFCs).

**22.** If such legislation is introduced it may come into force on 15 April 2015 or a later date.

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<sup>5</sup> Rounding up or rounding down in relation to partial amounts; rounding up where the fraction is 0.5 litres or above.

# 1. Renewable gaseous fuels

- 1.1 Currently the RTFO rewards renewable gaseous fuels on the basis of the weight of the fuel. Gaseous fuels receive one renewable transport fuel certificate (RTFC) per kilogram, this means that the reward for one kilogram of gaseous fuel is equivalent to that for one litre of liquid biofuel. Double counting<sup>6</sup> can apply to both gaseous and liquid biofuels, although gaseous fuels are more likely to be made from waste and therefore receive double the number of RTFCs.
- 1.2 The proposal is to support renewable gaseous fuels in a way which reflects their energy content rather than their weight.
- 1.3 The energy contained in a kilogram of gaseous fuel is generally higher than the energy found in a litre of liquid fuels. We believe that making this change will provide a more level playing field for suppliers of renewable gaseous fuels for transport.

## Question 1a. Do you agree with the proposed change in the allocation of RTFCs for renewable gaseous fuels based on their energy content?

### Summary of responses

Table 1.1			
Yes	No	Other comments	No response
18	6	1	3

- 1.4 The majority of respondents supported increasing the number of RTFCs for renewable gaseous fuels. However, a number of changes to the proposed methodology which determines the number of RTFCs to be issued were put forward. Please refer to section 1b for the Government response on the methodology.
- 1.5 Two respondents highlighted that it would be important for this change to also be applied to hydrogen.
- 1.6 The respondents who did not agree with, or provided other comments on, the proposed change in the allocation of RTFCs for renewable gaseous fuels were generally in agreement with the principle of rewarding renewable gaseous fuels on the basis of energy content, but

<sup>6</sup> Biofuels from wastes and residues (and ligno-cellulosic and non-food cellulosic feedstocks) receive twice as many RTFCs than biofuel from crop based and other non-waste feedstocks.

thought that this principle should also apply consistently to all renewable fuels.

- 1.7** Other respondents commented that the proposed approach should not create distortions in the market which favour gaseous fuels over liquid fuels that have the same energy, adjusted for greenhouse gas impact.
- 1.8** One respondent disagreed on the basis that the proposed approach would be contradictory to the Government's position that significant changes to the RTFO Order 2007 should not be made until negotiations at EU level around ILUC are concluded. The respondent argued that the Government's proposed change is a significant change to an energy based RTFC mechanism.

### *Government response*

- 1.9** The Government has noted the prevailing view in favour of the proposed change in the allocation of RTFCs for renewable gaseous fuels to reflect their higher energy content relative to the equivalent volume of liquid biofuels.
- 1.10** The Government has noted the calls that the same methodology in the RTFO should apply now to both liquid and gaseous fuels. As discussed in paragraph 17, the Government does not intend to make any significant change to the RTFO until ongoing European negotiations around ILUC have concluded.
- 1.11** It is the Government's intention to provide a more level playing field for suppliers of renewable gaseous fuels for transport, both in relation to liquid renewable fuels and also with Government support for heat and electricity.
- 1.12** We intend therefore to proceed with the proposal to increase the reward for renewable gaseous fuels (see the response to question 1b for the methodology to determine the number of RTFCs).
- 1.13** The Government would like to confirm that the reference to 'bio-hydrogen' in the consultation refers to renewable hydrogen from biomass.
- 1.14** The Government has noted the calls to include renewable hydrogen produced from biomass, given its higher energy content, in the amendments which have been proposed for 2015. However, we do not at this time expect renewable hydrogen from biomass to be widely available before 2020 and do not therefore consider it is yet necessary to provide a specific certificate multiplier for hydrogen based on its energy content, such as is being provided for biomethane and bio-LPG, in the RTFO scheme.
- 1.15** As well as providing that one kilogram of biomethane will receive 1.9 RTFCs and 1 kilogram of bio-LPG<sup>7</sup> will receive 1.75 RTFCs, we are likely to retain the current provision in the RTFO Order 2007, which rewards gaseous fuels with one RTFC per kilogram of renewable gaseous fuels

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<sup>7</sup> 'Bio-LPG' here refers to renewable gaseous fuel including biopropane and/or biobutane

supplied. This provision would then apply to any “other gaseous fuels” (i.e. gaseous fuels which are not biomethane, biobutane or biopropane) which may be supplied in the future.

**Question 1b. Do you have any comments on our proposed methodology for calculating the implicit energy content of an RTFC?**

*Summary of responses*

Table 1.2		
Yes	No	No response
17	4	7

- 1.16** The prevailing view was that although the principle of rewarding renewable gaseous fuels to reflect their energy content is the correct way forward, the proposed methodology for determining the number of RTFCs to be issued needed further consideration.
- 1.17** Several options were proposed for amending the methodology (see Table 1.3).
- 1.18** A number of respondents questioned the validity of utilising the full range of data from the start of the RTFO (in 2008) in determining the certificate multiplier which calculates the reward for renewable gaseous fuels, i.e. that which was proposed in the consultation. The view of those respondents was that utilising data from 2008 onwards (option 1 in Table 1.3) would pre-date the nationwide establishment of ethanol blending facilities and the baseline<sup>8</sup> would therefore be heavily weighted towards biodiesel, which was the principal means of compliance with the RTFO in the early years. As biodiesel has a higher energy content than bioethanol, the consequence of utilising the full range of data from the start of the RTFO, as opposed to a more recent data set, would be that the fuel mix used to determine the baseline would result in a slightly higher energy content value for liquid renewable fuels, and would result in a lower certificate multiplier for biogas. The more recent data set also better reflects current and likely future supply of liquid renewable fuels.
- 1.19** Furthermore, the methodology proposed in the consultation also includes biofuel volumes that pre-date the UK implementation of the mandatory sustainability criteria in the Renewable Energy Directive (RED). Inclusion of such data would create further inaccuracies in the proposed methodology as the requirements for biofuels have changed since the implementation of the RED.
- 1.20** Other respondents proposed that the weighted average energy density of fuels supplied under the RTFO would need to be reviewed annually in order to ensure that calculations remain accurate (option 4 in Table 1.3).

<sup>8</sup> Comparison of the average energy content of a kilogram of gaseous fuels to average energy content of a litre of renewable liquid fuels.

- 1.21** One respondent also queried why a weighted average had been used, as the volume of a particular biofuel supplied should be irrelevant in terms of calculating energy equivalence versus another biofuel (option 5 in Table 1.3).
- 1.22** Two respondents also felt that the methodology should be extended to include hydrogen.
- 1.23** Finally, fuel-neutrality - i.e. that one hydrocarbon fuel should not be favoured over another, except on the grounds of sustainability and impact on carbon footprint - was viewed as a core principle which should be reflected in the RTFO, and the proposed methodology could therefore prove to be anti-competitive and inconsistent with the underlying goal of the RTFO to establish a robust marketplace for competition between sustainable liquid and gaseous fuels.
- 1.24** Other methodologies put forward by respondents were:
- That all RTFCs could be awarded in proportion to energy density, or on the basis of fossil fuel energy displacement in road transport;
  - That RTFCs should be awarded in relation to carbon saved;
  - That one fuel should be used as the baseline i.e. petrol and then all fuels are adjusted against that benchmark.

**Table 1.3**

Proposal No.	Options for determining the number of RTFCs to be awarded for gaseous fuels	Details	Benefits	Disadvantages	No. RTFCs which would be awarded
1	<p><b>Methodology proposed in the consultation:</b></p> <p>Use weighted average energy density of liquid biofuels supplied under the RTFO to calculate the number of RTFCs to award to renewable gaseous fuels</p>	<p>Compares average energy content of a kilogram of gaseous fuels to average energy content of a litre of renewable liquid fuels (the baseline) to calculate the number of RTFCs which should be awarded to gaseous fuels to receive a comparable level of support.</p> <p>The baseline uses five years (2008-2013) of historic RTFO data.</p> <p>The dataset would not be updated and would be fixed in legislation.</p>	<p>Meets the policy objective of increasing the reward for gaseous fuels to reflect their higher energy content comparative to liquid fuels.</p> <p>Helps to close the gap with DECC incentives for use in heat and power.</p> <p>Achievable in the short term.</p> <p>Simple to administer</p>	<p>Widely unsupported by stakeholders.</p> <p>Does not adequately reflect the current fuel mix, which includes a greater proportion of ethanol.</p>	<p>Bio-LPG: 1.62</p> <p>Biomethane: 1.76</p>
2a	<p><b>Intended option:</b></p> <p>As above but with a narrower dataset to determine the baseline.</p>	<p>This option uses the same calculation methodology as (1) but with reference to a more recent dataset for the baseline (Dec 2011 – Apr 2014).</p> <p>The dataset for this baseline is consistent with biofuels supplied since RED implementation.</p>	<p>Meets the policy objective of increasing the reward for gaseous fuels to reflect their higher energy content comparative to liquid fuels.</p> <p>Helps close the gap with DECC incentives for use in heat and power.</p> <p>Achievable in the short term.</p> <p>Simple to administer.</p>	<p>None.</p>	<p>Bio-LPG: 1.75</p> <p>Biomethane: 1.90</p>

			<p>Baseline more relevant to current and likely future supply.</p> <p>Supported by a number of stakeholders.</p>		
2b	As 2a but also takes into account double counting	As for 2a but the baseline takes into account the implied average energy content of an RTFC rather than the average energy content per litre of liquid fuel. The former is lower due to double reward of wastes.	<p>Meets the policy objective of increasing the reward for gaseous fuels to reflect their higher energy content comparative to liquid fuels.</p> <p>Helps close the gap with DECC incentives for use in heat and power</p> <p>Achievable in the short term.</p> <p>Simple to administer</p>	<p>Double counting is not relevant to the energy content of the fuel mix and therefore is not as aligned with the policy objective of adjusting the support for renewable gaseous fuels to take into account the energy density of gaseous fuels.</p> <p>The proportion of fuel which receives double certificates may change in future supply meaning the multiplier may become less representative over time.</p> <p>Whether a fuel received double counting or not is linked to the feedstock from which it is derived and is therefore not related to whether a fuel receives and RTFC which is based on the fuel type.</p>	<p>Bio-LPG: 1.65</p> <p>Biomethane: 1.79</p>



3	Award gaseous fuels an increased number of RTFCs based on a simple rounded number.	RTFCs are awarded based on a simple rounded number. This option arose from analysis of the alternative methodologies proposed by stakeholders, and calculation of the number of RTFCs that each of these alternatives would provide (given that the variance is small).	<p>Meets the policy objective of increasing the reward for gaseous fuels to reflect their higher energy content comparative to liquid fuels.</p> <p>Helps close the gap with DECC incentives for use in heat and power.</p> <p>Achievable in the short term.</p> <p>Simple to administer.</p> <p>This option is a 'middle path' to the suggestions made by respondents to the consultation.</p>	<p>Is based on a rounded figure, and does not use a calculation-based methodology, therefore it could be open to wider interpretation.</p> <p>May be more difficult to apply consistently to other renewable gaseous fuels which could enter the market in the future.</p>	<p>Bio-LPG: 2</p> <p>Biomethane: 2</p>
4	Annual review of the baseline.	As per (1), but the dataset for the baseline should be updated on an annual basis.	<p>Meets the policy objective of increasing the reward for gaseous fuels to reflect their higher energy content comparative to liquid fuels.</p> <p>Helps close the gap with DECC incentives for use in heat and power.</p> <p>Baseline more relevant to current and future supply.</p>	<p>More difficult to achieve in the short term as it would require either:</p> <ul style="list-style-type: none"> <li>- Giving additional powers to the Administrator to review the baseline and hence number of RTFCs issued; or</li> <li>- Revising the legislation annually.</li> </ul> <p>Presents less certainty for industry as the level of support would fluctuate over time.</p>	<p>Bio-LPG: 1.74</p> <p>Biomethane: 1.89</p> <p><i>Baseline year: April 2013-2014</i></p>

5	Use average energy content of different renewable fuels to determine baseline, but without adjusting according to actual supply.	This takes into account the energy content of different types of liquid biofuel to determine the baseline, but does not weight the energy content according to volume supplied.	<p>Broadly meets the policy objective of increasing the reward for gaseous fuels to reflect their higher energy content comparative to liquid fuels.</p> <p>Helps close the gap with DECC incentives for use in heat and power.</p> <p>Achievable in the short term.</p> <p>Simple to administer.</p>	<p>Whilst it meets the policy objective it does not take into account energy content of actual fuel supplied. It therefore inflates the reward beyond that required to adjust the level of support for gaseous renewable fuels in line with that already given for liquid biofuels.</p>	<p>Bio-LPG: 2.07</p> <p>Biomethane: 2.25</p>
6	The baseline should be based on the number of RTFCs per unit of energy supplied.	This differs from (1) in that the baseline is calculated with reference to the number of certificates per unit of energy rather than energy content of volume supplied.	<p>Meets the policy objective of increasing the reward for gaseous fuels to reflect their higher energy content comparative to liquid fuels.</p> <p>Helps close the gap with DECC incentives for use in heat and power.</p> <p>Achievable in the short term</p> <p>Simple to administer.</p>	Does not offer improvement to the methodology.	<p>Bio-LPG: 1.7</p> <p>Biomethane: 1.85</p>

## *Government response*

- 1.25** Following analysis of the options proposed for determining the level of support for renewable gaseous fuels (see Table 1.3 above), it is apparent that, whilst there are a number of different ways to adjust the methodology, the range of RTFCs that would be awarded under any of the methodologies is relatively narrow: 1.62-2.07 for bio-LPG and 1.76-2.25 for biomethane.
- 1.26** Having considered the responses, the Government now intends to use the methodology that was set out in the consultation, but with the dataset proposed in methodology 2a instead. The Government has considered and agrees with the points, as detailed in paragraphs 1.18 and 1.19 of this Government response, which were raised in the consultation in relation to using the dataset that was originally proposed in the consultation. The Government's view is that the dataset proposed in methodology 2a would produce a more representative result for calculating the number of RTFCs to be awarded for renewable gaseous fuels than using the methodology with the dataset proposed in the consultation and any of the other methodologies suggested in response to the consultation. Using the dataset proposed in methodology 2a would mean that the baseline to determine the number of RTFCs to be issued to renewable gaseous fuels better reflects the current and likely future fuel mix due to developments in the industry since RED implementation.
- 1.27** Therefore the Government intends to use this methodology in determining the number of RTFCs that renewable gaseous fuels should receive. Where these are derived from wastes or residues the adjusted number of RTFCs will be doubled.
- 1.28** As bio-LPG refers to a blend of gases including biopropane and/or biobutane these will be listed individually in the RTFO Order.
- 1.29** The Government notes the concerns raised about the wider implications of this change for the scheme and the debate over whether the RTFO should be an energy-based scheme, or whether certificates might be awarded in a way which reflects carbon savings. These are potential significant changes to the scheme which we will consider further as part of discussions with stakeholders on how the UK can best meet its 2020 targets under the RED and Fuel Quality Directives under an obligation scheme.
- 1.30** As stated in the response to question 1a, the Government recognises the calls to include renewable hydrogen in the RTFO 2015 amendments; however, we do not expect renewable hydrogen from biomass to be widely available before 2020 and do not therefore consider it is yet necessary to provide a specific certificate multiplier for hydrogen based on its energy content, such as is being provided for biomethane and bio-LPG, in the RTFO scheme. As stated in paragraph 1.15, the Government would like to clarify that, as well as providing that one kilogram of biomethane will receive 1.9 RTFCs and 1 kilogram of bio-LPG will receive 1.75 RTFCs, we intend to retain the current provision in

the RTFO Order 2007, which rewards gaseous fuels with one RTFC per kilogram of renewable gaseous fuels supplied. This provision would then apply to any “other gaseous fuels” (i.e. gaseous fuels which are not biomethane, biobutane or biopropane) which may be supplied in the future, and would include hydrogen.

**Question 1c. Do you have any other comments on this proposal?**

*Summary of responses*

**Table 1.4**

Yes	No	No response
16	7	5

- 1.31** As already stated under sections 1a and 1b above, a number of respondents suggested that the RTFO scheme should be based on energy content for renewable liquid fuels as well as for renewable gaseous fuels.
- 1.32** Two respondents also argued that liquid fuels which are manufactured from renewable gaseous fuels should receive equal treatment for the component of the finished fuel that is made from gaseous material, with double counting applied where appropriate.
- 1.33** One respondent emphasised the importance of Government support to incentivise vehicle conversions to utilise renewable gaseous fuels, particularly in the HGV fleet, and emphasised that all renewable gaseous road fuels should receive equal treatment.
- 1.34** One respondent highlighted that as well as the potential use of biomethane within the HGV fleet, biopropane also has a very high potential for use in the HGV fleet - either as a substitute for conventional LPG up to 100% or in a blend for HGVs, without significant changes to the infrastructure for distribution and usage. One respondent stated that energy equivalence will make a strong contribution towards making it possible for liquid biomethane production to compete for biogas at large landfill sites, given the competition for biogas that exists between the electricity, heat and transport sectors. The respondent also stated that the Government's proposal should only be considered as an interim solution given that there is a limited supply of biomethane available in the UK in commercial quantity which can be used for conversion to the transportation fuel liquid biomethane.
- 1.35** One respondent stated that the RTFC in its current form, and based on its volatile market price history, would not be bankable. The respondent

suggested that there are various ways in which RTFCs could be made more bankable, which included:

- limiting/ excluding 'bad biofuels' from qualification for RTFC award;
- guaranteeing a floor price for RTFCs awarded to gaseous fuels;
- introduction of a mandatory amount of physical biogas to be sold with every kilogram of natural gas used as a transportation fuel; or
- ensuring that an RTFC does not have a maturity date, such as applies to Renewable Heat Incentive awards.

### *Government response*

- 1.36** The Government believes that incentivising renewable gaseous fuels is critical to the decarbonisation of the transport sector, in particular, the HGV sector.
- 1.37** The Government has noted the calls that the same methodology in the RTFO should apply now to both liquid and gaseous fuels and the proposals to make RTFCs more 'bankable'. As stated at paragraph 17, the Government does not intend to make any significant change to the RTFO until ongoing European negotiations around ILUC have concluded.
- 1.38** Renewable gaseous fuels at present make up 0.15% of renewable transport fuel reported and are predominantly generated from waste products, so are less likely to be significantly affected by any measures agreed to address ILUC. Therefore, rewarding renewable gaseous fuels to better reflect their energy content will have less of an effect on the market for renewable transport fuels than would making similar provisions for liquid biofuels.
- 1.39** However, the Government recognises that further changes to the way in which we incentivise renewable transport fuels are likely to be needed in the future, and that these may alter the basis on which incentives are provided for specific fuels. We currently intend to consult further on possible options upon the conclusion of the ILUC negotiations.
- 1.40** The Government has noted the call to ensure that liquid fuels which are manufactured from renewable gaseous fuels should receive equal treatment for the component of the finished fuel that is made from gaseous material, with double counting applied where appropriate. We do not consider that additional support for such fuels is necessary at this time but will keep this issue under review.
- 1.41** The responses on renewable gaseous fuels received in this consultation will help to inform further consideration with stakeholders of policy on renewable transport fuels.

**Gaseous fuels clarification note: Do you have any comments on the clarification note explaining how gaseous fuels may count towards a supplier’s potential obligation?**

- 1.42** Following publication of the consultation document the Government subsequently published a clarification note. This note was issued to clarify that where gaseous fuels which do not meet the sustainability criteria in the RTFO are supplied, under the proposed policy these fuels would add to a supplier’s obligation using the same multipliers used when rewarding those fuels, rather than one litre’s worth of obligation accruing as is currently the case.
- 1.43** This note also underscored that the Government does not anticipate this to be a likely scenario, and this would not be expected to lead to any significant costs.

*Summary of responses*

<b>Table 1.5</b>		
<b>Yes</b>	<b>No</b>	<b>No response</b>
1	11	16

- 1.44** One comment was received on the clarification note, which raised a query concerning how the Government intends to work with the Green Gas Certificate schemes to address the likely shortfall in availability of biomethane given the growing requirements in the HGV fleet up to 2020.

*Government response*

- 1.45** The Government recognises the potential of biomethane to contribute significant carbon savings in the transport sector.
- 1.46** The Low Emission HGV Technology Task Force which brings together representatives from industry and across Government has considered some of the barriers and opportunities for low emission HGV technologies.
- 1.47** The Government is responding by supporting the greater take up of gaseous fuels in this sector. Last December the Government announced that the lower rate of fuel duty for road fuel gases would be guaranteed for ten years. Extending this lower duty rate recognises that industry

needs certainty in order to make the initial investments in gas fuelled vehicles and refuelling infrastructure for gas.

- 1.48** It is anticipated that amending the RTFO, so that renewable gaseous fuels are eligible for a greater number of RTFCs, will better incentivise the supply of biomethane to the transport sector. These amendments will therefore build on the greater investment certainty provided by the extension of the duty differential from which suppliers of road fuel gases are also benefitting.
- 1.49** We are undertaking research to establish biomethane supply potential in the UK up to 2030, and how supply could be scaled up to meet greater demand in the transport sector.

## 2. Synthetic fuels from renewable electricity

- 2.1** At present the RTFO only supports renewable fuels made from biomass. However, other forms of renewable energy can be used to make transport fuels, by converting various forms of energy into chemical energy.
- 2.2** In the light of a number of helpful responses received to the Call for Evidence on Advanced Fuels in December 2013<sup>9</sup> we consulted further on the potential for future support for synthetic fuels produced using renewable electricity, including renewable hydrogen, through the RTFO.

**Question 2a. Do you agree that we should amend the RTFO to allow synthetic fuels to be eligible for support?**

### *Summary of responses*

**Table 2.1**

Yes	No	No response
19	4	5

- 2.3** There was general agreement that the RTFO should be amended to allow synthetic fuels to be eligible for support.
- 2.4** Those respondents who were in agreement underlined the importance that synthetic fuels should have the same or improved environmental benefits in comparison to existing biofuels.
- 2.5** Three respondents highlighted the benefits that such an amendment would have of establishing a supportive environment for businesses to commit to significant investment in this area.
- 2.6** Two respondents were of the view that the current round of proposed legislative changes to the RTFO Order 2007 should include synthetic

<sup>9</sup> <https://www.gov.uk/government/consultations/advanced-fuels-call-for-evidence>



fuels, given the progress that is being made in the field of hydrogen, and that making these legislative changes as soon as possible would help to further incentivise the development and deployment of hydrogen stations.

- 2.7** Four respondents did not agree that the RTFO should be amended to allow synthetic fuels to be eligible for support.
- 2.8** Two of the respondents who disagreed with the proposal were concerned that the synthetic fuel most likely to be produced would be methanol, which could have a highly negative impact on the UK bioethanol industry given methanol's potential for displacing bioethanol.
- 2.9** One of the respondents who disagreed considered that introducing such an amendment to the RTFO should only be made after the RED has been amended to explicitly recognise synthetic fuels. This would thereby ensure that a common EU-wide methodology is in place for calculating the sustainability and greenhouse gas savings of synthetic fuels on a full lifecycle basis.
- 2.10** Additionally, in taking forward such an amendment there should be a specific consultation on amending the RTFO to include synthetic fuels accompanied by a thorough cost benefit analysis.
- 2.11** One respondent also disagreed on the grounds that including synthetic fuels using renewable electricity raises difficulties in terms of being able to include clear definitions in the legislation, for example “renewable”, “biogenic origin” and “raw material”.
- 2.12** Technology neutrality was raised as a point both in favour of, and against, the proposed amendment. Those in favour stated that the RTFO should be technology-neutral and therefore all renewable fuels, including synthetic fuels, should be eligible. However, in opposition it was felt by one respondent that the meaning of the phrase 'technology-neutral' was being stretched in order to encompass synthetic fuels because the proposal is promoting one specific technology and therefore cannot be described as neutral.

**Question 2b. Do you agree the only two inputs that should be allowed in the production of synthetic fuels should be carbon dioxide and hydrogen? If not, what other inputs should be included and why?**

*Summary of responses*

Table 2.2			
Yes	No	Neutral	No response
9	7	2	10

- 2.13** Respondents were divided on this issue.
- 2.14** Those respondents who were in agreement considered that the proposal encompassed the two most relevant inputs. Encompassing a broader range of inputs would increase the risk that fossil fuels could be reprocessed so as to be classified as synthetic fuels.
- 2.15** Those respondents who disagreed were of the view that other inputs should be allowed, if they facilitate the process. For example, carbon monoxide should be included on the basis that it is likely that future applications of the synthetic fuel technology will include gasification of biogenic waste, which produces syngas composed of carbon monoxide as well as carbon dioxide and hydrogen.
- 2.16** One respondent stated that the RED should first be updated to explicitly recognise synthetic fuels, including a definition of their production inputs, before such amendments were made to the RTFO.
- 2.17** Two respondents gave a neutral response on the basis that the answer to this question is dependent on a satisfactory and accepted definition of a 'raw material'.

**Question 2c. Do you agree that synthetic fuels should receive two RTFCs per litre of fuel?**

*Summary of responses*

Table 2.3		
Yes	No	No response
13	5	10

- 2.18** Of those who responded there was general agreement that synthetic fuels should receive two RTFCs per litre of fuel, and that this would be consistent with the current position for fuel derived from approved wastes or residues under the RTFO Order 2007 which receives two RTFCs per litre of fuel supplied.
- 2.19** Respondents also suggested that synthetic fuels should receive incentives that are comparable to or better than incentives for biofuels from waste, as synthetic fuels have the potential to deliver the same or better greenhouse gas savings per unit of energy. Additionally, this would incentivise the development and use of synthetic fuels, particularly those which are sustainable and have high greenhouse gas reduction potential.

- 2.20** Those respondents who disagreed with the proposal were of the view that the justification for synthetic fuels to receive two RTFCs per litre of fuel needed further clarification.
- 2.21** One respondent stated that synthetic fuels should receive certificates based on their energy content in comparison to the baseline fuel, and failure to do so could lead to perverse incentives.
- 2.22** One respondent emphasised that any decision on the rewards for synthetic fuels should only be made after the RED has been amended.

**Question 2d. Do you agree with our proposal<sup>10</sup> for proving whether electricity used to produce synthetic fuel is renewable? Are there any other sources of evidence that should be considered?**

*Summary of responses*

<b>Table 2.4</b>		
<b>Yes</b>	<b>No</b>	<b>No response</b>
11	8	9

- 2.23** Eleven respondents supported this proposal and a further eight did not.
- 2.24** Those respondents who were in agreement commented that it would also be important to require appropriate verification to be provided for all production methods claiming to use renewable electricity in the production of synthetic fuel, and to ensure that renewable electricity used does not also receive support under another Government renewable energy support scheme.
- 2.25** One respondent suggested that the evidence of renewable energy should be demonstrated through existing mechanisms such as Renewable Obligation Certificates. Another respondent suggested that, in the longer term, the evidence to be provided by the supplier should be in the form of “Guarantees of Origin” as defined in the RED.
- 2.26** Those respondents who disagreed commented that the proposed definition of renewable electricity appears to be restrictive without any justification, and is not in line with the premise that the RTFO should be technology-neutral.
- 2.27** Two respondents also stated that it would be helpful to acknowledge DECC projections that the anticipated carbon intensity of UK grid

<sup>10</sup> That fuel suppliers will be required to demonstrate that the electricity involved in the production of their fuel comes from renewable sources. To demonstrate this fact we propose that suppliers will be able to produce either

- evidence that the electricity comes from their own privately owned renewable electricity plant; or
- evidence of the purchase of the renewable electricity from a domestic renewable electricity supplier, such as a power purchase agreement

electricity is expected to fall significantly towards 2030, as this provides an important context for fuels derived from electricity.

**Question 2e. Do you agree that we should limit the sources of carbon dioxide (that is, i) carbon dioxide from naturally occurring sources, and ii) carbon dioxide from waste) that can be used in the production of synthetic fuel? Do you have any comments on the sources of carbon dioxide that we have chosen?**

### *Summary of responses*

**Table 2.5**

Yes	No	No response
12	6	10

- 2.28** There was general agreement that the sources of carbon dioxide that can be used in the production of synthetic fuel should be limited.
- 2.29** Those respondents who were in agreement commented that the definitions proposed in the consultation document were reasonable and that the sources of carbon dioxide need to be limited in order to ensure that potential synthetic fuels offer a genuine greenhouse gas benefit. However, the respondents also noted that care will be needed not to increase demand for carbon dioxide from this process and the policy will need to be carefully drafted and monitored to avoid abuse.
- 2.30** The majority of those respondents who disagreed commented that the source of carbon dioxide should be irrelevant and that providing the carbon dioxide has not been deliberately generated to produce the synthetic fuel, any source should be permitted, including that which is already present in the atmosphere, or would otherwise have been emitted to the atmosphere.
- 2.31** One respondent also commented that a Government policy mechanism which supports the addition of carbon dioxide to road transport fuel would be at odds with the wider policy objective of reducing carbon emissions, as any carbon dioxide added to fuel will inevitably be released to atmosphere.
- 2.32** The comments on the sources included in the consultation were as follows.
- 2.33** *Carbon dioxide from naturally occurring sources:*

- a. The inclusion of carbon dioxide from geothermal sources was welcomed, and respondents agreed that it should fall within its own category, given that it is neither the end-product of a bio-fermentation process nor the result of a fossil combustion or chemical process. However, it was noted that such sources of carbon dioxide must be carefully examined to ensure that they have not been stimulated.

**2.34** *Carbon dioxide from waste:*

- a. Two respondents felt that the concept of a waste had been stretched and should not include waste of fossil origin, for example, carbon dioxide that would otherwise have been flared.
- b. One respondent commented that carbon dioxide from waste could not be classed as truly synthetic, and its volume would not be significant for mass manufacture.
- c. Another respondent stated that a clear definition is needed of what are eligible waste sources.

**2.35** Other sources of carbon dioxide suggested by respondents included:

- a. Carbon dioxide from anaerobic digestion, which would also have the benefit of further supporting biomethane production.
- b. Carbon dioxide produced from other refinery or petrochemical processes, or processes from other industries which produce waste carbon dioxide.

**2.36** One respondent also considered that any limitations on support for synthetic fuels should allow for the inclusion of hydrogen produced from industrial processes (i.e. brown hydrogen) in addition to hydrogen which is produced using renewable electricity.

**Question 2f. Do you agree with our proposal for fuel that has been produced using a mixture of renewable and non-renewable electricity<sup>11</sup>?**

*Summary of responses*

<b>Table 2.6</b>		
<b>Yes</b>	<b>No</b>	<b>No response</b>
13	5	10

**2.37** There was wide agreement for the proposal for fuel that has been produced using a mixture of renewable and non-renewable electricity.

<sup>11</sup> In certain cases, suppliers of synthetic fuels may use a mix of renewable and non-renewable electricity to produce the hydrogen. In this case, we proposed that the resultant fuels should receive support in the same way that partially renewable biofuels receive support under the RTFO.

- 2.38 Those respondents who were in agreement commented that this was an equitable way forwards, especially in consideration of the fact that the current grid is a mixture of renewable and non-renewable energy. Treating these fuels in the same way that partially renewable fuels are currently rewarded under the RTFO, and therefore subjecting them to the same greenhouse gas performance criteria, would help to maximise the uptake of renewable electricity. However, it will be important to ensure that the calculation used to determine the percentage is verifiable and auditable.
- 2.39 One respondent felt that this flexibility should also be expanded to hydrogen production processes.
- 2.40 Those respondents who disagreed commented that synthetic fuels need to have a distinct arrangement from biofuels (i.e. one set of targets for biofuels, and another set of minimum greenhouse gas saving percentages for synthetic fuels), especially if they are to gain commercial traction - applying the same greenhouse gas saving criteria to synthetic fuels may restrict their application and therefore limit the opportunities for commercial development.
- 2.41 Two respondents also raised a need for better clarity on the definitions; if the electricity is being classed as a 'raw material', then the difference between renewable and non-renewable will be important. In addition, the respondents suggested a clearer definition of Government support is also needed.
- 2.42 One respondent disagreed on the basis that any such decision should only be made after the RED has been amended to explicitly recognise these types of fuel.

**Question 2g. Do you have any comments on how the RED methodology for determining the lifecycle emissions of renewable fuels might need to be adapted for synthetic fuels?**

*Summary of responses*

Table 2.7		
Yes	No	No response
12	16	0

- 2.43 There was broad agreement that the RED methodology may help to form a useful basis on which to determine the lifecycle emissions of synthetic

fuels, and some helpful suggestions around which sustainability reporting might be assured.

**2.44** However, a number of issues were also identified by respondents which make clear that whilst there is agreement that synthetic fuels should have to meet the minimum greenhouse gas savings in the RED, how this might be calculated is not straight forward.

**2.45** A number of respondents identified significant challenges in determining the greenhouse gas savings of fuels in a way which is fair to both new technologies and is broadly compatible with the criteria applied to biofuels. For example, how we should consider the wider environmental impacts of producing synthetic fuels.

**Question 2h. Do you have any other comments on the proposal to amend the RTFO to allow synthetic fuels to be eligible for support?**

*Summary of responses*

<b>Table 2.8</b>		
<b>Yes</b>	<b>No</b>	<b>No response</b>
10	18	0

**2.46** A number of suppliers sought assurance that a full impact assessment outlining the costs to the UK biofuel industry will be produced before any change to the RTFO to include synthetic fuels is introduced.

**2.47** Other responses from a range of organisations suggested the Government should look to further incentivise synthetic fuels, for example, by including a minimum percentage of synthetic fuel in the transport fuel supply or separate targets for synthetic fuels and biofuels, to stimulate the production of these new and innovative fuels.

**2.48** In support of greater incentives for synthetic fuels it was argued that this was necessary to enable penetration into the UK renewables market and because national grid renewability should improve over time.

*Government response to the responses received on synthetic fuels from renewable electricity*

**2.49** The Government is grateful for the responses on its proposals to incentivise synthetic fuels under the RTFO in the future. As explained in the consultation document, we do not believe that we are in a position yet to amend the RTFO to incentivise synthetic fuels. Combined with responses to the Call for Evidence on Advanced Fuels, the responses to this consultation contribute to a useful evidence base on which to base

future decisions. We will work further with stakeholders to develop any proposals.

- 2.50** As acknowledged by many of the respondents it will be essential to clearly define what fuels and raw materials are covered, the boundaries of the greenhouse gas calculation, and any other criteria that need to be met to ensure the fuel is sustainable. Further, the evidence and verification requirements need to be developed.
- 2.51** We will be considering the inclusion of synthetic fuels in the RTFO when developing proposals to meet the RED and Fuel Quality Directive targets in 2020, and to support low carbon transport fuels beyond 2020.
- 2.52** In addition to the need to further develop the evidence base for this policy on synthetic fuels, the Government will take account of amendments proposed to the RED to address ILUC which may mean that certain synthetic fuels count twice towards our targets under the RED. These amendments to the RED could be agreed in the first quarter of 2015.
- 2.53** The Government has not at this stage updated the cost benefit analysis to reflect comments on the impact that incentives for synthetic fuels from renewable electricity might have on the wider RTFO market. We will consult further with stakeholders in developing these proposals, and revise the analysis in the context of those discussions.
- 2.54** The Government is continuing to look to make the UK an attractive market for new and advanced fuel technologies with the potential to deliver high carbon savings. To this end we will be announcing details of an advanced biofuel demonstration plant competition later this year. We will also continue to gather evidence on the potential of synthetic fuels.



## 3. Alignment of support for biodiesels

- 3.1** Under the RTFO, fatty-acid-methyl-ester (FAME), a form of biodiesel, is treated as wholly renewable and receives one RTFC per litre. FAME is a nearly wholly renewable transport fuel, in that it is derived from around 90% biomass and around 10% methanol from fossil fuel.
- 3.2** Hydrotreated vegetable oil (HVO) is another form of biodiesel that, like FAME, involves some non-renewable inputs in its production process. The amount of renewable inputs to the production process for HVO is similar to that of FAME, and in many cases higher. However, HVO is not currently treated as wholly renewable under the RTFO.
- 3.3** We proposed to align the treatment of FAME and HVO so that HVO also receives one RTFC per litre of fuel (or two RTFCs if the fuel is produced from a waste or a residue).

**Question 3a. Do you agree with the proposal to award HVO one RTFC per litre?**

### *Summary of responses*

**Table 3.2**

Yes	No	No response
15	3	10

- 3.4** There was general agreement in response to this question that it would be pragmatic to treat HVO under the RTFO in the same way as FAME, that is, as wholly renewable where the mandatory sustainability criteria are met.
- 3.5** The main objection put forward from the respondents who did not agree with the proposal was that fossil natural gas is considered to be a significant input into the production process of HVO, and incentivising its use in this way is not appropriate under a scheme designed to incentivise renewable fuels.
- 3.6** It was also suggested that to achieve genuine harmony in the treatment of renewable fuels a clearly designed threshold should be put in place so

that fuels derived from 90 per cent or more biomass content would receive one renewable transport fuel certificate i.e. be treated as wholly renewable.

**Question 3b. Do you have any other comments on this proposal?**

*Summary of responses*

<b>Table 3.2</b>		
<b>Yes</b>	<b>No</b>	<b>No response</b>
9	9	10

- 3.7** There was broad support for the pragmatism of the proposal. However, whilst voicing their support of this approach, respondents also flagged that the Government should be mindful of the fact that this approach could be detrimental to other biofuels which do not receive this kind of treatment.
- 3.8** Suppliers highlighted that HVO is also produced as a co-processed HVO and fossil fuel product. It was suggested that the HVO component produced via this route should receive equal treatment regarding the award of RTFCs.
- 3.9** Respondents also queried here, and under other questions in the consultation, whether dimethyl ether (DME) and biopropane should also be considered to be 100 per cent renewable.
- 3.10** Clarity was sought by some respondents on whether this proposal would mean that where HVO is derived from waste it would be eligible for additional RTFCs.
- 3.11** One respondent raised a question on the reporting of mixtures of HVO and FAME and the ways in which they are reported in instances when they have been physically mixed (e.g. in one tank).

*Government response*

- 3.12** In light of the support from the majority of respondents we intend to proceed with our proposal to deem HVO to be wholly renewable.
- 3.13** This is in line with the Government's emerging understanding of how HVO should be treated under the RED. This is also consistent with the treatment of HVO in other EU Member States.

- 3.14** The amendments to the RTFO Order 2007 to deem HVO as wholly renewable will also apply to co-processed HVO.
- 3.15** We would also like to clarify that the measure proposed does not affect the treatment of waste derived fuels, where the fuel supplied is sustainable. Additional incentives for wastes and residues will be applied as they are now, for example, biofuel derived from used cooking oil, which receives two RTFCs per litre.
- 3.16** The Government would also like to reiterate that, as per the RTFO guidance, individual biofuels must be reported separately on the Administrator's IT system (the "ROS").

## 4. Clarification on the powers to request information from suppliers

- 4.1** Article 13(1) of the RTFO Order 2007 provides a general power for the Administrator to impose a requirement on any transport fuel supplier (i.e. not just those obligated) to provide such information as the Administrator may require for purposes connected with the carrying out of the Administrator's functions.
- 4.2** We proposed removing the list in Article 13(4)<sup>12</sup> of the RTFO Order 2007, to make clearer that the purpose of the general power in Article 13(1) is to support the exercise of the Administrator's current functions and in particular to continue the effective administration and enforcement of the scheme.

**Question 4a. Do you agree with the proposed amendment of Article 13 to clarify the powers to request information from suppliers?**

### *Summary of responses*

**Table 4.2**

Yes	No	No response
15	1	12

<sup>12</sup> Article 13(4) also provides a list of the type of information that may be required by the RTFO Administrator without prejudice to Article 13(1). This includes:

- (a) carbon emissions;
- (b) agriculture;
- (c) other economic activities;
- (d) sustainable development; or
- (e) the environment generally.

- 4.3** All but one of those that responded agreed with this proposal. The respondent who did not support it felt that without seeing the amendment it was not possible to agree the change.
- 4.4** Those that supported the proposal to clarify the Article 13 power emphasised that powers for regulators are needed to ensure integrity in the reporting system and to reduce the risk of abuses of the system. They therefore agreed that in amending the RTFO Order 2007 we should ensure the remaining powers enable the effective administration and enforcement of the scheme.
- 4.5** Equally, those responding in favour made clear that the current use of the Administrator's powers to require information might be more proportionate.
- 4.6** It was recommended by one supplier that the independent verification that is used at various stages within the RTFO compliance process, where independently verified information is provided as counterparty assurance, should be more readily accepted by the Administrator. It was suggested instead that the Administrator should focus its efforts on checking information provided without such verification.
- 4.7** It was also a cause of concern for another supplier that the Administrator routinely requests additional information without respect to the powers permitted under the RED, and that the use of the powers to require information needs to acknowledge the integrity and authority that has been given by the European Commission to approved voluntary schemes (that is, schemes which provide evidence of sustainability for the purpose of the RED).

### *Government response*

- 4.8** Similar concerns were raised by suppliers in response to the Government's consultation on the draft post-implementation review of the Renewable Transport Fuels Obligation.
- 4.9** It remains the Government's view that to maintain the integrity of the RTFO, it is essential that only sustainable biofuels are rewarded.
- 4.10** Part of ensuring this happens involves the Administrator taking appropriate steps to ensure the information supplied in RTFC applications is accurate. This may include asking for supporting evidence and sampling on the basis of risk.
- 4.11** We will continue to work with suppliers to make sure that the RTFO does not impose unnecessary burdens on suppliers. The Government intends to amend Article 13 to make clear that the purpose of the use of the general power in Article 13 is to support the exercise of the Administrator's current functions and in particular to continue the effective administration and enforcement of the scheme.
- 4.12** However, in doing so we will not weaken the Administrator's ability to effectively enforce the RTFO, ensure the integrity of the scheme or carry

out risk based checks of supply chains of biofuels. To do so would not maintain the confidence built up in the scheme, and risks making less effective the measures we have in place to meet our targets in the RED.

## 5. Rounding of certificates

- 5.1** The RTFO Order 2007 requires the Administrator to issue an RTFC for each whole litre of renewable transport fuel supplied. Where volumes of fuel reported could, theoretically, result in a supplier's total renewable fuel supply being an amount which includes a partial litre, a certificate cannot be awarded in respect of that partial litre.
- 5.2** In addition, as explained in section 1 the Government is proposing to award RTFCs to renewable gaseous fuels to reflect their greater energy content relative to liquid biofuels. This involves applying multipliers, which are not whole numbers, to whole volumes of renewable fuel reported, which could result in a partial litre being shown on the ROS, and the Administrator can only issue certificates for whole litres of fuel.
- 5.3** The Government proposed to amend the RTFO Order 2007 to put beyond doubt that the Administrator can apply conventional mathematical rounding as part of calculating the number of RTFCs that may be issued.

**Question 5a. Do you agree with the proposal to put beyond doubt that the Administrator can apply conventional mathematical rounding where part litres of renewable fuel are reported?**

### *Summary of responses*

**Table 5.2**

Yes	No	No response
18	1	9

- 5.4** The vast majority of those that responded were in agreement with the proposal.
- 5.5** There was one request that the ROS, the IT system used by suppliers who report and claim incentives under the RTFO, might be adapted to allow for fuels to be reported to two decimal places to assist the reporting of volumes of biofuel by country of origin.
- 5.6** A concern was also raised in respect of whether the effect of any rounding would be significant and unintended in respect of proposals to apply new certificate multipliers for gaseous fuels.

## *Government response*

- 5.7** The Government is not minded to make changes to allow reporting in the ROS to two decimal places because this is an unnecessary level of precision which would create administrative burden. From previous consultation with stakeholders we do not consider a move to greater precision would be widely supported.
- 5.8** As rounding applies to each application of RTFCs (rather than to each RTFC) the Government estimates that less than 0.005% of renewable fuel reported under the RTFO is potentially affected by rounding.
- 5.9** Gaseous fuels make up 0.15% of biofuel supply and 0.1% of RTFCs issued: the impact of rounding on gaseous fuels<sup>13</sup> is estimated to affect less than 0.000001% of RTFCs issued. Rounding will not, therefore, have adverse unintended consequences.
- 5.10** We will therefore amend the RTFO Order 2007 so that the Administrator can apply conventional mathematical rounding when determining the volume of renewable transport fuel that is potentially eligible for RTFCs. This will also ensure that where the multiplier for determining the number of RTFCs to be issued to renewable gaseous fuels is applied and results in a fraction, this will be rounded up or down (rounding up where the fraction is the equivalent of 0.5 litres or above).
- 5.11** For administrative simplicity we will clarify in the RTFO Guidance that suppliers can apply rounding to volumes when reporting them in the ROS under the RTFO, including for partially renewable fuels. This does not constitute a change to current practice.

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<sup>13</sup> This takes into account both the impact of the supplier rounding to report volumes in the ROS and the multiplier that will be applied to gaseous fuels to determine the number of RTFCs awarded (and subsequent rounding such that only whole RTFCs are awarded).



## 6. Cost benefit analysis

- 6.1** This consultation requested comments on the analysis of costs and benefits of the proposed changes to the RTFO Order 2007, including evidence wherever possible.
- 6.2** It also requested suggestions for any alternative methods for reaching the policy objectives of the proposed changes, any possible unintended consequences of the proposed policies, and practical enforcement or implementation issues.

### Question 6a. Do you have any comments on the analysis of costs and benefits?

#### *Summary of responses*

**Table 6.1**

Yes	No	No response
7	10	11

- 6.3** Four respondents provided comments on the issue of fuel displacement, as discussed in the analysis of costs and benefits, including the effect that fuel displacement may have on the UK ethanol industry and waste biofuel industry. Two respondents expressed the view the calculation of greenhouse gas savings from fuel displacement may have been overstated, and that it should be based on available RTFO data.
- 6.4** One respondent queried the method used for the calculation of the baseline, and suggested that it would be simpler to benchmark against a traditional fuel, such as petrol, and then adjust all other fuels up or down based on this baseline.
- 6.5** One respondent questioned whether a move to gaseous fuels from liquid biofuels, and thereby a reduction in the supply of liquid biofuels under the RTFO, would be beneficial<sup>14</sup>. It was noted that it is not the intention of the RTFO to replace one type of renewable transport fuel with another, and

<sup>14</sup> In principle, changing the number of RTFCs awarded per kilogram of renewable gaseous fuel means that for the same amount of biomethane used, more RTFCs would be awarded. As a fixed number of RTFCs are required to meet a fuel supplier's obligation under the RTFO, increasing the supply of RTFCs that are awarded for the use of gaseous fuels will reduce the demand for RTFCs from the supply of liquid fuels, therefore reducing the supply of liquid biofuels under the RTFO.

additionally it also contradicts the Government's stated intention to encourage the production in the UK of advanced liquid biofuels.

- 6.6** One respondent stated that the assumption that 5% of HGVs will be using methane from 2015 is unrealistic, based on current updates from other Member States, such as Germany.
- 6.7** One respondent suggested that the impact assessment should consider the most cost effective carbon dioxide route.
- 6.8** One respondent disagreed with the statement in the consultation: "we therefore assume that biomethane will continue to be the only gaseous renewable fuel supplied under the RTFO between now and 2020"; the respondent expected hydrogen to be supplied as a synthetic fuel to fuel cell electric vehicles under the RTFO between 2015-2020.
- 6.9** One respondent highlighted that, based on current prices, the indication is that there is still an abundance of used cooking oil available for supply to the UK. The impact of this has been to create pressure on the waste biofuel sector, and the proposed rewards for renewable gaseous fuels, which are likely to displace higher biodiesel blends in HGVs, are likely to further contribute to this pressure on the waste biofuel sector.
- 6.10** One respondent raised that the justification for the change as set out in the text and the draft cost benefit analysis is not based on clear consistent principles which should apply across the RTFO.

### *Government response*

- 6.11** The revised cost benefit analysis no longer includes synthetic fuels because, as explained in the consultation document, the intention is to consider at a later date including synthetic fuels in the RTFO Order 2007 so that they are eligible for RTFCs.
- 6.12** To clarify, we anticipate the share of newly registered HGVs that are gas-powered or dual fuel to be 5%. This would be 5% of new vehicles, not 5% of the whole fleet from, 2015 onwards.
- 6.13** Table 3 in annex A of the consultation document does not include hydrogen. As stated in section 1, this is because the Government does not expect renewable hydrogen from biomass to be widely available before 2020 and do not therefore consider it is yet necessary to provide for it in the RTFO scheme.
- 6.14** The Government acknowledges the suggestion to benchmark against a traditional fossil fuel in the calculation of the baseline. However, under the RTFO as it is now we consider it more likely that small amounts of liquid biofuels will be replaced with renewable gaseous fuels.

- 6.15** The Government has reviewed the calculation of greenhouse gas savings from fuel displacement. In the revised cost benefit analysis we include calculations without ILUC factors and calculations using carbon intensity reported under the RTFO.
- 6.16** The joint Government / Industry Task Force on low carbon HGV technologies has identified gaseous fuels as the top priority for decarbonising the HGV sector, with the greatest potential for carbon reduction. We expect that supporting gaseous fuels will support the long-term decarbonisation of heavy goods vehicles. In addition, we expect that supporting renewable gaseous fuels will help us meet the RED transport sub-target in 2020.
- 6.17** To the extent that double counted renewable gaseous fuel may replace single counted liquid renewable fuel, the overall transport energy supplied under the RTFO may decrease. This shortfall may result in additional sales of other liquid biofuels or of fossil fuels and an associated change in carbon emissions. We have not attempted to quantify this secondary effect, since its impact depends on which liquid biofuel is the marginal fuel at the time, the comparative costs of fossil and biofuels and the RTFO obligation level. In the Government's view it would not be helpful to pre-empt discussions taking place with stakeholders on future obligation levels as part of this analysis.
- 6.18** This cost benefit analysis focuses on the likely impacts expected from a proposed policy change. It is beyond its scope to address the cost effectiveness of other carbon abatement mechanisms.