Renewable Transport Fuels Forum

Monday 12 September, 2022

@REAssociation

Housekeeping for today's meeting

- Please mute yourself when not speaking
- Where possible, please have your camera on when taking part in discussion
- We will be recording the call to support accurate note-taking and for the benefit of members who are unable to attend
- We will circulate presentations after the meeting

REA Competition Law Policy

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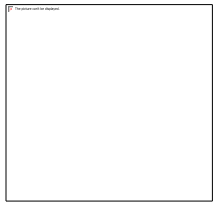
  - Competitively sensitive information covers any non-public strategic information about a business's commercial policy. It includes, but is not limited to, future pricing and output plans



Agenda

1	Welcome, housekeeping, introductions
2	Response to RTFO consultation on Recycled Carbon Fuels
3	Transport policy updates (Paul Thompson): • Sustainable Aviation Fuels • Hydrogen in the RTFO
4	Wider policy updates: • BEIS hydrogen policy (Kiara Zennaro) • Greenhouse Gas Removals and biomass strategy (Mark Sommerfeld) • Low Carbon Fuels Strategy (Paul Thompson)
5	New Prime Minister & Cabinet and REA approach (Amy MacConnachie)

RTFO Recycled Carbon Fuels consultation

RTFO Recycled Carbon Fuels (RCFs) consultation

Builds on 2021 consultation

Targeting net zero – Next steps for the Renewable Transport Fuels Obligation (publishing.service.gov.uk)

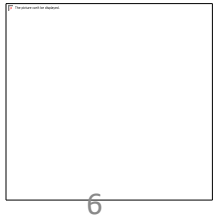
Government Response to 2021 consultation:

- Confirm inclusion of RCFs in RTFO. Will require amendments to Energy Act 2004
- Only committed to inclusion of 2 feedstocks – refused derived fuel and waste industrial gases. Open to wider range of feedstocks
- Support only available to RCFs that are also development fuels
- Several areas identified as needing further work

Targeting net zero - next steps for the Renewable Transport Fuels Obligation (publishing.service.gov.uk)

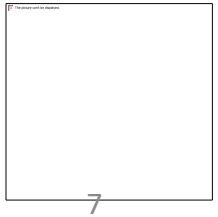
Current consultation launched 19 July 2022. Closes **Monday 19 September**

Supporting recycled carbon fuels through the Renewable Transport Fuel Obligation - GOV.UK (www.gov.uk)



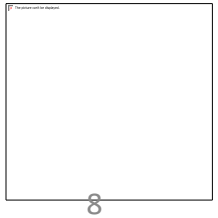
Criteria for eligibility: types of feedstocks

- 2021 consultation limited to only two feedstocks
- Now proposing a principles-based approach:
  - Must be a waste that cannot be prevented, reused or recycled
  - Consider impacts on carbon emissions, agriculture, other economic activities, sustainable development and the environment generally
  - Consider any alternative uses and alternative disposal outcomes that could have been adopted or used
- Assessment to be made by the RTFO administrator. Could be rolling assessment (DfT preferred approach) or annual



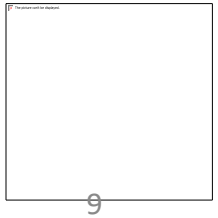
Criteria for eligibility: minimum biogenic content

- 2021 consultation proposed a minimum biogenic content in solid waste feedstocks of 25%
- Preferred option not to have any minimum biogenic requirement by default – although one could still be imposed for specific feedstock approvals
- Also consulting on alternative option of introducing a lower (10%) minimum requirement

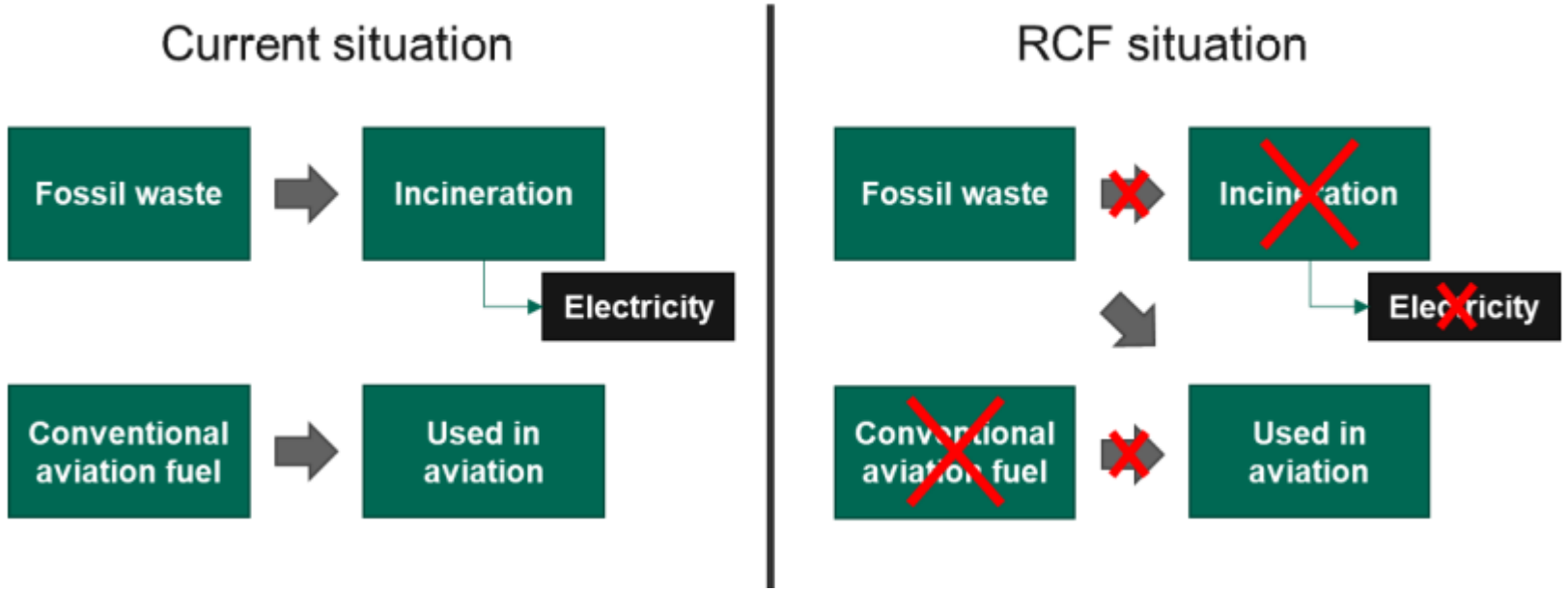


Consultation questions on eligibility criteria

1. Do you agree or disagree that a principles-based approach should be taken to determining RCF feedstock eligibility?
2. Do you agree or disagree with the proposed criteria? Are there any additional criteria we should consider?
3. What is your preferred option for determining feedstock eligibility? Please justify your answer and provide supporting evidence where appropriate/available. We also welcome feedback from stakeholders concerning how best to structure an annual assessment process
4. What is your preferred option for the minimum biogenic content requirement? Please justify your answer and provide supporting evidence where available

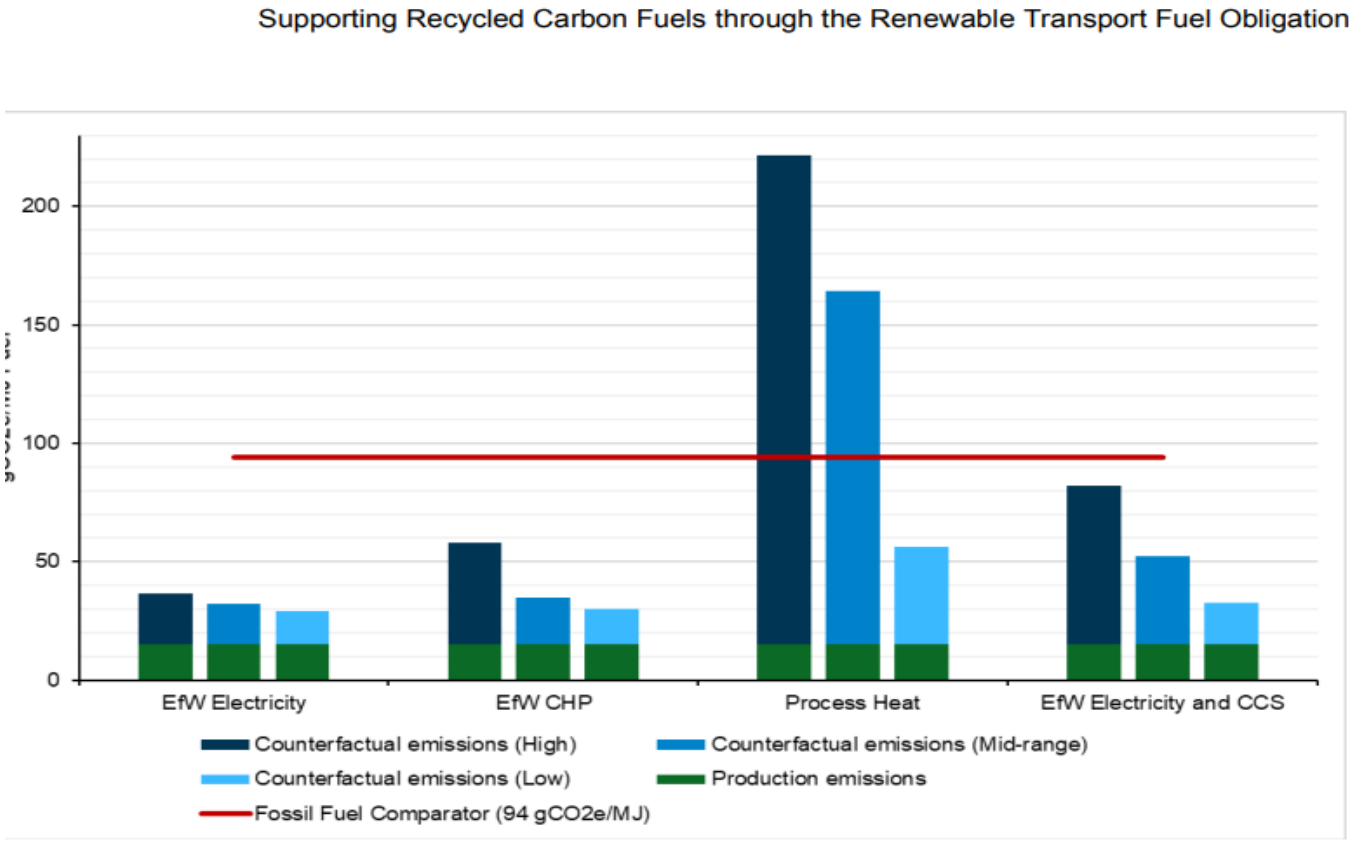


Sustainability: basic principle



Sustainability: counterfactual (1)

- 2021 consultation proposed a single counterfactual for the end of life of solid feedstocks – EfW (electricity only)
- Although the most common end of life outcome, it is not necessarily the marginal one. GHG savings from RCFs are lower in other scenarios:

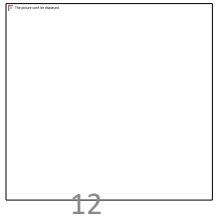


Sustainability: counterfactual (2)

- DfT consider that the impact of greater use of CHP or CCS at EfW plant may affect the calculations, requiring future revision of the approach but not a concern for now (and if CCS can be fitted to EfW it may also be possible to fit to the RCF facility)
- Risks on process heat as 'real' counterfactual can be dealt with by the principles based eligibility assessment
- Also consider differing approaches around an 'aggregate' counterfactual or plant by plant. Both are seen as complex and not necessarily giving better outcomes.

Final proposal:

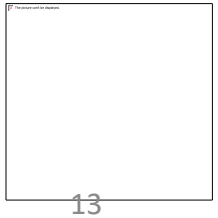
1) EfW (electricity only) the default counterfactual for all
2) Non-gaseous feedstocks: RTFO administrator can define alternative counterfactual or revise approach if appropriate (esp re heat export/CCS)
3) Gaseous feedstocks: an alternative counterfactual can be defined at production plant level and can occur during the pre-approval process



Sustainability: counterfactual (3)

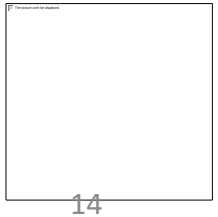
Further details on counterfactual proposals:

- use grid average emissions factors for the most recent available year (ie the year preceding the year in which the RCF is 'supplied') when accounting for displaced electricity generation
- Use R1 standard for conversion efficiency of EfW plant. 2021 consultation proposed conversion efficiency of 26%. New proposals put this at 22%, to take into account parasitic load (based on Tolvik 2020 statistics)
- Processing emissions should be taken into account where they do not cancel out with the counterfactual use:
  - So emissions from additional processing on feedstock preparation that would be unlikely to occur in EfW counterfactual must be accounted for
  - REA has had separate correspondence with DfT on CO2 emissions from the conversion process (as opposed to inputs from external energy sources). These do not have to be accounted for as they would have occurred in the counterfactual
- Where multiple co-products are produced, allocation of emissions to occur based on energy content (ie as with RTFO currently)



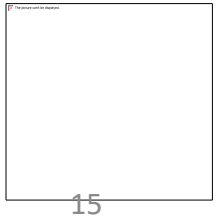
Consultation questions on sustainability (1)

5. Do you agree or disagree with the proposed approach for determining the counterfactual to be used?
6. Do you agree or disagree that the grid average emissions factors for the most recent available year (ie the year preceding the year in which the RCF is supplied) should be used as the emissions factor for the displaced energy in the counterfactual?
7. Do you agree or disagree that the Efe factor for EfW (electricity only) counterfactual should be taken as 22%?
8. Do you agree or disagree with the proposed methodology for dealing with processing emissions and coproducts? If you disagree please describe an alternative proposed approach and provide any relevant evidence to support the use of this alternative approach



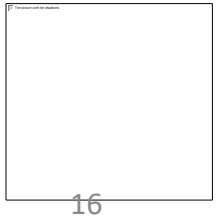
Sustainability: GHG savings threshold

- Fossil fuel comparator of 94gCO2eq/MJ. This is not being consulted on now
- Given the use of grid average intensities to calculate GHG of lost electricity generation, the performance of RCFs will appear to improve as electricity grids decarbonise
- 2021 consultation proposed tiered approach on required savings: 55% on introduction, 60% from 2025, 65% from 2030
- This approach still being considered as an option, although with date changes given the lag between decarbonisation of the grid occurring and it being reflected in official statistics (55% on introduction, 60% from 2029 and 65% from 2032)
- Preferred approach that the maximum permissible intensity will be calculated annually in accordance with the rate of observed decarbonisation. Although complex, this would protect fuel producers if electricity grids decarbonise more slowly than hoped. Not entirely clear how this would relate to non-UK fuel production



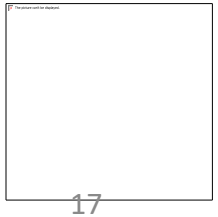
Sustainability: other issues

- Reporting and verification requirements broadly as rest of RTFO:
  - Third party verification to limited assurance standard
  - Suppliers can make use of third party voluntary schemes where available
- Additional sustainability criteria. Propose requirement to meet ‘sustainable waste management criteria’ as follows:
  - Best Available Techniques have been used to maximise separation of waste and extract recyclable material
  - Process that produced the waste feedstock has not been intentionally modified to increase the production of the waste
  - No adverse local environmental impacts have been caused as a result of sourcing or processing the feedstock
- These criteria will likely be treated as met if they are required by law – for instance Environmental Permitting in UK



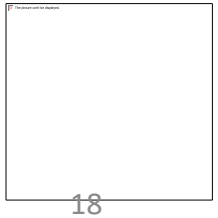
Consultation questions on sustainability (2)

9. What is your preferred option for the GHG emission savings threshold? Please justify your answer and provide supporting evidence where available
10. Do you agree or disagree that the reporting and verification requirements for RCFs should be aligned with renewable fuels currently supported under the RTFO?
11. Do you agree or disagree that RCF suppliers should be required to demonstrate compliance with the ‘sustainable waste management criteria’? If you disagree, please provide alternative suggestions concerning how to mitigate sustainability risks



Level of reward

- 2021 consultation proposed reward of equivalent 1 dRTFCs/litre for RCFs made from gaseous feedstocks and 0.5 dRTFCs/litre for those made from solids
- New proposal is that all RCFs receive 0.5 dRTFCs/litre
- Main driver appears to be the desire to ensure RCF support cannot divert plastic feedstock from recycling. DfT analysis shows this as a possibility – but with a very wide range of uncertainty



Consultation questions on reward level

12. Do you agree or disagree with our proposal that all RCFs should be awarded 0.5 dRTFCs per litre of fuel supplied? Please provide evidence to support your reasoning for a higher or lower level of reward

Summary of analysis

B1: Do you agree or disagree that the assumptions made in modelling the RCF counterfactual emissions are reasonable? Please give reasoning for your answer

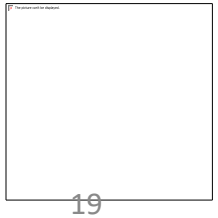
B2: Do you agree or disagree that the assumptions made in modelling how the GHG emissions from RCFs will change over time are reasonable? Please give reasoning for your answer

B3: Do you agree or disagree that the assumptions made in modelling the impact of different RCF reward rates are reasonable? Please give reasoning for your answer

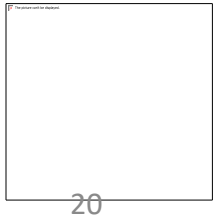
Cost-benefit analysis

C1: Do you agree or disagree that the assumptions made in the cost-benefit analysis are reasonable? Please give reasoning for your answer

C2: Do you have any evidence on the estimated costs of producing RCFs?



Aviation



Jet Zero Strategy (1)

Original consultation

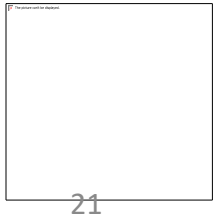
jet-zero-consultation-a-consultation-on-our-strategy-for-net-zero-aviation.pdf (publishing.service.gov.uk)

Further technical consultation

Jet Zero: updated evidence and analysis to inform our strategy for net zero aviation - GOV.UK (www.gov.uk)

Government response

Jet Zero consultation: summary of responses and government response (publishing.service.gov.uk)



Jet Zero Strategy (2)

- Targets for all UK domestic commercial and freight flights to be net zero by 2040
- Trajectory to be set based on in-sector emissions (ie not including offsets). Revised trajectory shows no growth in emissions from 2019 levels then reductions in the 2030s
- Ambition for all UK airport operations to be zero emissions (ie not just **net** zero) by 2040
- CAA to develop policy to support consumers in making good environmental choices, hoping to have in place by end 2023
- Not contemplating any further demand management measures as current DfT modelling shows it is possible to reach net zero without them (with 27% of reductions coming from ETS or CORSIA)
- Many further consultations to come on the details

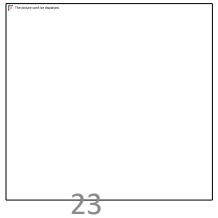
Sustainable Aviation Fuel (SAF) mandate (1)

Original consultation

Sustainable aviation fuels mandate: A consultation on reducing the greenhouse gas emmisions aviation fuels in the UK (publishing.service.gov.uk)

Government response (published 19 July 2022)

Sustainable aviation fuels mandate: summary of consultation responses and government response (publishing.service.gov.uk)



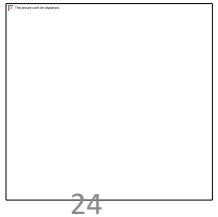
SAF mandate (2)

Headline

- A mandate will be introduced from 2025 (probably 1 Jan), using existing RTFO powers. When introduced, SAF will no longer be eligible for RTFO support
- Mandate will be set on GHG basis
- Tradeable credits awarded to those supplying eligible SAF
- 2030 level will be 10% of fuel being SAF (not stated what that means in GHG)
- Levels before and after 2030 (up to 2050) yet to be set

Eligibility

- There will be a cap on HEFA and a PtL sub-target, although levels will be for the next consultation
- Crops not supported. Wastes and residues are supported
- Stress use of waste hierarchy and wider avoidance of sub-optimal waste impacts. Assessments will be on case by case basis



SAF mandate (3)

Sustainability

- Baseline is 89gCO2eq/MJ. This is same as CORSIA but different to RTFO
- Minded to do minimum GHG savings requirement of 50%. Given the baseline that would mean that anything meeting other relevant policy areas (except CORSIA) would also meet UK SAF mandate
- RFNBO additionality rules likely to apply, although this is emerging area (and interaction with nuclear electricity unclear)
- Where hydrogen is an input may not necessarily follow BEIS Low Carbon Hydrogen Standard
- Mass balance approach (ie not book and claim). Similar reporting patterns and publishing information to the RTFO. Auditing required. Considering whether to require 'reasonable' assurance but for now going with 'limited'

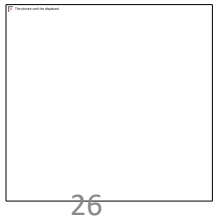
SAF mandate (4)

Scheme admin

- No double counting of savings between the mandate, UK ETS etc. But multiple ways in which the schemes could interact and more thought needed
- There will be a buy out. Level to be determined
- Mandate will not distinguish between dutiable status
- Minded to set a *de minimis* threshold. Level tbc

Topics to be covered in further consultation (Autumn 2022)

- Mandate trajectory
- Interaction with other policies
- Assessment point
- Level of *de minimis* threshold
- Frequency of review of mandate targets
- Buy out mechanism design
- Any measures required in relation to tankering
- Details on admin processes



Hydrogen and Renewable Fuels of Non-biological origin (RFNBOs) in RTFO

Hydrogen and RFNBOs (1)

Previous consultation

Targeting net zero – Next steps for the Renewable Transport Fuels Obligation (publishing.service.gov.uk)

Government response

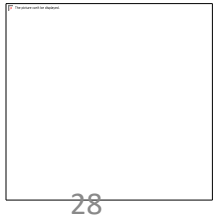
Targeting net zero - next steps for the Renewable Transport Fuels Obligation: Hydrogen and renewable fuels of non-biological origin, government response (publishing.service.gov.uk)

RFNBO guidance

RTFO guidance for renewable fuels of non-biological origin (publishing.service.gov.uk)

Draft statutory instrument

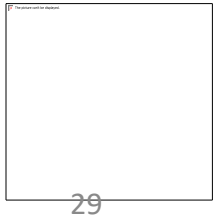
Draft statutory instrument: The Renewable Transport Fuel Obligations (Amendment) Order 2022 (publishing.service.gov.uk)



RFNBOs

New guidance published 19 July 2022. As measures on this slide are relaxation of existing rules will apply from date of publication. To be bolstered by changes to the RTFO order with definition of ‘additionality’. Key points:

- Principles of additionality themselves unchanged. But electricity can be supplied via grid, using PPAs to show link to additional renewable generation. REGOs can form part of the evidence but not a substitute for PPA
- 30-minute temporal correlation required
- Storage acceptable, so long as was additional at time of generation
- Account for grid transmission losses. Use 9% default, but can get round via specific metering data points
- Life extension to existing renewable generation can in principle be regarded as additional



Biohydrogen

2021 consultation proposal confirmed. SMR and ATR biohydrogen without substantial CCS become eligible for regular RTFCs, not dev RTFCs. Regular multipliers still apply so if from wastes would get double RTFCs (but not dRTFCs)

- Substantial CCS means 50% of the CO2 stored, currently limited to geological storage
- No exemptions for smaller plant or for co-located SMR at point of biogas production
- Other routes to produce biohydrogen unaffected
- Since these are removing things, will apply from 1 Jan 2023