



Department
for Transport

Guidance

The RTFO: an essential guide

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This publication is available at <https://www.gov.uk/government/publications/about-the-rtfo/the-rtfo-an-essential-guide>

What is the RTFO?

The Renewable Transport Fuel Obligation (RTFO) commenced on 15 April 2008 and is one of the government's main policies for reducing greenhouse gas emissions from transport. The RTFO delivers greenhouse gas (GHG) emission savings by encouraging the supply of renewable fuels for use in UK transport.

Under the RTFO, suppliers of relevant transport fuel (petrol, diesel, gas oil or renewable fuel) in the UK must meet an annual obligation using tradeable certificates which are awarded for the supply of sustainable renewable fuel. The RTFO is administered by a team within the Department for Transport (DfT) called the Low Carbon Fuels (LCF) Delivery Unit.

In 2023, because of the RTFO, 3.7 billion litres of renewable fuel was supplied for use in UK transport. This constitutes 7.5% of total fuel for road and non-mobile machinery use supplied over the year. This delivered greenhouse gas savings of 7.9 million tonnes of CO_{2eq}. Further details on the outcomes, cost and impact of the RTFO can be found in:

- [RTFO statistics \(https://www.gov.uk/government/collections/renewable-fuel-statistics\)](https://www.gov.uk/government/collections/renewable-fuel-statistics)
- [RTFO annual reports \(https://www.gov.uk/government/collections/renewable-transport-fuels-obligation-rtfo-orders#rtfo-annual-reports\)](https://www.gov.uk/government/collections/renewable-transport-fuels-obligation-rtfo-orders#rtfo-annual-reports)

How does the RTFO work in practice?

The RTFO applies to fuel suppliers who own fossil and/or renewable transport fuel at the point that it becomes liable for HMRC fuel duty (the 'duty point'). Suppliers of relevant fuel totalling 450,000 litres or more for use in a relevant transport mode during an obligation period^[footnote 1] must register with the LCF Delivery Unit and may be subject to an obligation. The relevant transport modes are:

- road vehicles
- non-road transports – including non-road mobile machinery (NRMM)
- maritime, if the fuel used is a renewable fuel of non-biological origin (RFNBO)

The obligation has 2 elements – the 'main obligation' and the 'development fuel target'. The obligation is calculated by multiplying the obligated amount (the total fossil and unsustainable renewable fuel supplied^[footnote 2]) by the

obligation percentage for that period. For 2025, this percentage is 14.054% for the main obligation and 1.619% for the development fuel target.

Obligated suppliers can meet their obligation by redeeming Renewable Transport Fuel Certificates (RTFCs) or by paying a fixed sum for each litre of fuel for which they wish to 'buy-out' of their obligation. An obligated supplier can obtain RTFCs either by supplying renewable fuels, or by buying them from renewable fuel suppliers. DfT sets the buy-out price [\[footnote 3\]](#) and the market determines certificates prices based on supply and demand.

RTFCs may be claimed for every litre (or equivalent) of sustainable renewable fuel supplied. These RTFCs can be of 3 types:

- 'relevant crop' which are subject to the crop cap
- 'development fuel' which can be used to meet the development fuel target
- 'general' which covers everything else

Fuel from certain wastes or residues, dedicated energy crops, and RFNBOs are awarded double the RTFCs per litre (or equivalent) supplied. Recycled carbon fuels (RCFs) are awarded single development RTFCs (dRTFCs) per litre (or equivalent) supplied. Those wishing to apply for RTFCs must have an account with the LCF Delivery Unit.

All applications for RTFCs must be independently verified and must demonstrate compliance with the RTFO sustainability criteria, which consist of the following:

- GHG emissions savings criteria: requires that renewable fuels deliver greenhouse gas savings relative to fossil fuels of at least 55 to 65% (depending on when the production installation started operating) – for RCFs, a distinct GHG methodology has been set out in Annex D of the [RTFO and SAF Mandate technical guidance](#) (<https://www.gov.uk/government/publications/rtfo-and-saf-mandate-technical-information>)
- land criteria: ensures the preservation of land with high biodiversity value or high carbon stock
- forest criteria: ensures legal harvesting, forest regeneration and the maintenance of soil carbon where forest biomass is used as a feedstock to make renewable fuels
- soil carbon criteria: requires impacts on soil quality and soil carbon from the use of agricultural wastes and residues as renewable fuel feedstocks to be monitored and addressed

In summary, complying with the RTFO tends to follow the following process:

Step 1: Fuel volumes

Fuel suppliers supply fuel for use in a transport in the UK. They report these volumes using the RTFO Operating System (ROS) which are then validated against data from HMRC.

Step 2: Renewable transport fuel certificates

For any renewable fuel supplied for use in the UK, suppliers can submit applications for RTFCs. Once applications have been independently verified, the LCF Delivery Unit conducts further, targeted checks and, if satisfied, awards RTFCs.

Step 3: Trading certificates

RTFCs can be traded on the open market. This allows, for example, suppliers of purely renewable fuel to sell their certificates to suppliers of fossil fuel who don't supply sufficient renewable fuel themselves to meet their obligation.

Step 4: Meeting the obligation

By 15 September in the year following an obligation period, obligated suppliers must meet their obligation (both the main and development fuel obligation) by redeeming sufficient RTFCs. If they don't, they must pay a buy-out price^{[\[footnote 3\]](#)}.

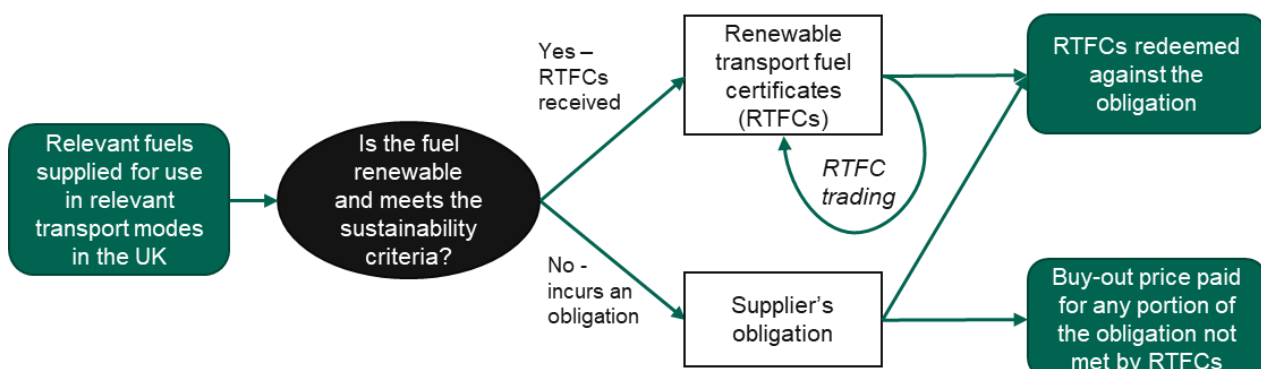


Figure 1: A simplified flow diagram of how the RTFO works.

What happens if fuel suppliers fail to comply with the RTFO?

If RTFCs have been awarded based on an erroneous application, the relevant RTFCs will be revoked. In certain cases of serious non-compliance, the LCF Delivery Unit has powers to impose civil penalties as set out in the civil penalties policy outlined in chapter 6 of the [RTFO compliance guidance](https://www.gov.uk/government/publications/rtfo-compliance) (<https://www.gov.uk/government/publications/rtfo-compliance>).

I am supplying a fuel that doesn't have an appropriate HMRC duty point, what should I do?

Where there is no appropriate HMRC duty point, an alternative assessment time is used. The owner of the fuel at this alternative assessment time will be the entity which incurs an obligation and/or is eligible to receive RTFCs for that fuel. The following alternative assessment times are currently defined:

- renewable hydrogen: the point of sale for consumption in transport
- maritime RFNBOs: the point at which it is dispensed for use in a ship
- renewable gases used in non-road transports: the point at which the fuel is 'set aside' for use in non-road transports

Volumes for fuels without an HMRC duty point cannot be reconciled against HMRC data – the LCF Delivery Unit will generally request additional evidence (such as sales invoices) to demonstrate that the fuels have been used in a relevant transport mode within the UK.

Can I carry over RTFCs from one obligation period to another?

Yes, unused RTFCs from a given obligation period can be carried over for use in the subsequent obligation year, but only once. For example, RTFCs from 2024 can be carried over into 2025, but not 2026. Obligated fuel

suppliers can meet up to 25% of their obligation using certificates from the previous obligation year.

How are gases like biomethane treated under the RTFO?

Gases are mostly subject to the same provisions as renewable fuels. However, gases are reported in kilograms rather than litres, with multipliers applied for specific gases for the purposes of awarding RTFCs. Suppliers of biomethane, or fuels for which biomethane is a chemical intermediate, must also meet specific [guidance for biomethane](https://www.gov.uk/government/publications/rtfo-biomethane) (<https://www.gov.uk/government/publications/rtfo-biomethane>).

I have a new low carbon fuel feedstock or production pathway and I am not sure how it is treated under the RTFO, what should I do?

Feedstocks that have already been assessed for eligibility and approved by the LCF Delivery Unit are [listed online](https://www.gov.uk/government/publications/rtfo-and-saf-mandate-feedstock-materials-used-for-creating-low-carbon-fuels) (<https://www.gov.uk/government/publications/rtfo-and-saf-mandate-feedstock-materials-used-for-creating-low-carbon-fuels>). Where a feedstock is not on this list, fuel suppliers should contact the LCF Delivery Unit who can undertake a feedstock assessment to determine how the feedstock should be classified under the RTFO.

For new production processes, particularly those resulting in a development fuel, fuel suppliers are encouraged to engage with the LCF Delivery Unit to discuss their process. The LCF Delivery Unit may be able to undertake a provisional assessment of whether fuel derived from the process would be eligible for RTFCs.

What are RFNBOs and how are they treated under the RTFO?

Renewable fuels of non-biological origin (RFNBOs) are produced from renewable energy sources other than biomass, such as solar, wind, geothermal and hydro. The simplest form of RFNBO is hydrogen produced through electrolysis using renewable electricity. These fuels are potentially eligible for RTFCs and the core requirements of the RTFO remain the same. [Guidance for RFNBOs \(https://www.gov.uk/government/publications/rtfo-renewable-fuels-of-non-biological-origin\)](https://www.gov.uk/government/publications/rtfo-renewable-fuels-of-non-biological-origin) sets out the GHG methodology to be used and 'additionality' requirements for the consumption of grid electricity.

What are RCFs and how are they treated under the RTFO?

Recycled carbon fuels (RCFs) are fuels made from a fossil waste which cannot be recycled, reused or prevented, and which has been designated as a relevant feedstock by the LCF Delivery Unit. These fuels are potentially eligible for single development RTFCs award. [Guidance for RCFs \(https://www.gov.uk/government/publications/rtfo-recycled-carbon-fuels\)](https://www.gov.uk/government/publications/rtfo-recycled-carbon-fuels) sets out the process for determining RCF feedstock eligibility and the specific carbon and sustainability requirements for RCFs under the counterfactual methodology.

Partially renewable and co-processed fuels, what are they and how treated under the RTFO?

Partially renewable fuels are those that are made from a mix of fossil and renewable inputs. Co-processed fuels are those that are produced through intermediate products of fossil and renewable origin being co-processed together in the same refinery, resulting in a blend of renewable and non-renewable fuel. In both cases, the renewable share of the resulting fuel should be calculated based on the percentage (by energy) of all the feedstocks which are renewable. This renewable share may be eligible for RTFCs and the fossil share may be liable for an obligation – see chapter 2 of [the RTFO and SAF Mandate technical guidance. \(https://www.gov.uk/government/publications/rtfo-and-saf-mandate-technical-information\)](https://www.gov.uk/government/publications/rtfo-and-saf-mandate-technical-information)

What fuels can receive development fuel RTFCs?

To receive development fuel RTFCs, the fuel must be an RFNBO, RCF or be made from a material that is deemed by the LCF Delivery Unit to be a double counting waste that is not a segregated oil and fat. They must also be one of the following fuel types:

- hydrogen
- substitute natural gas – renewable methane produced from gasification or pyrolysis
- a ‘drop-in’ petrol or diesel which can be blended to at least 25% while still meeting the relevant standards

All development fuels are awarded double the RTFCs per litre (or equivalent) of fuel supplied, with the exception of RCFs which are awarded one development RTFC per litre (or equivalent) of fuel supplied. For more details on development fuels, see chapter 2 of the [RTFO and SAF Mandate technical guidance](https://www.gov.uk/government/publications/rtfo-and-saf-mandate-technical-guidance) (<https://www.gov.uk/government/publications/rtfo-and-saf-mandate-technical-guidance>).

Where can I find out more?

[RTFO compliance guidance](https://www.gov.uk/government/publications/rtfo-compliance) (<https://www.gov.uk/government/publications/rtfo-compliance>): a first port of call for further, more detailed information.

[RTFO third-party assurance guidance](https://www.gov.uk/government/publications/rtfo-and-saf-mandate-third-party-assurance) (<https://www.gov.uk/government/publications/rtfo-and-saf-mandate-third-party-assurance>): specific guidance on the role of verifiers and voluntary schemes under the RTFO.

[RTFO biomethane guidance](https://www.gov.uk/government/publications/rtfo-biomethane) (<https://www.gov.uk/government/publications/rtfo-biomethane>): specific additional guidance for the supply of biomethane or fuels derived from biomethane.

[RTFO guidance on renewable fuels of non-biological origin](https://www.gov.uk/government/publications/rtfo-renewable-fuels-of-non-biological-origin) (<https://www.gov.uk/government/publications/rtfo-renewable-fuels-of-non-biological-origin>): specific guidance for renewable fuels made from non-biogenic renewable feedstocks.

RTFO guidance on recycled carbon fuels

(<https://www.gov.uk/government/publications/rtfo-recycled-carbon-fuels>): specific guidance for fuels made from fossil waste which cannot be recycled, reused or prevented.

List of feedstocks, including wastes and residues

(<https://www.gov.uk/government/publications/rtfo-and-saf-mandate-feedstock-materials-used-for-creating-low-carbon-fuels>): a list of feedstocks that have been assessed for eligibility by the LCF Delivery Unit.

Carbon calculator (<https://www.gov.uk/government/publications/biofuels-carbon-calculator-rtfo>): a free software tool which can be used by fuel suppliers to calculate the carbon intensity of the fuels they supply.

The LCF Delivery Unit can be contacted at rtfo-compliance@dft.gov.uk.

1. Obligation periods run 1 January to 31 December.
2. The obligated amount is calculated by subtracting the total volume of sustainable fuel (renewable fuel that has been awarded certificates) from the total volume of (fossil and renewable) fuel supplied.
3. The buy-out price is currently 50p per standard RTFC and 80p per development fuel RTFC.