



Department for Transport

Renewable Fuel Statistics 2018

April to December

Final Report

About

This is the final report for 2018. This covers the supply of renewable fuel from 15th April to 31st December 2018 which has been reported under the Renewable Transport Fuel Obligation (RTFO).

This series was previously entitled "Renewable Transport Fuel Obligation Statistics: period x, report x."

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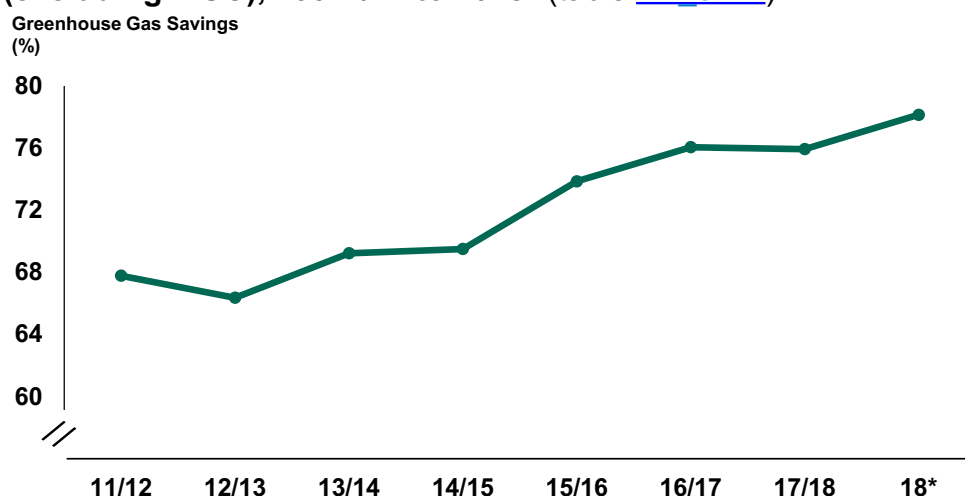
Note: This reporting period is shortened to align the reporting schedule with the calendar year for future reports. See the Background Information for more details.

Renewable fuels are fuels produced from biomass (organic material from plants and animals) or some other renewable energy source. They are often blended with conventional fuels such as petrol or diesel, but they produce lower greenhouse gas emissions as their energy comes from renewable sources.

In 2018 (April - December):

- **1,518 million litres eq.** of verified renewable fuel has been supplied, constituting **4%** of total road and non-road mobile machinery fuel.
- This is an increase in renewable fuels as a proportion of total fuels from 3.1% in the last reporting period (2017/18), reflecting the increase in renewable fuel requirements under the RTFO (see page 12).
- This renewable fuel delivered an average **greenhouse gas (GHG) saving of 78%** compared to fossil fuels (not accounting for indirect land use change).
- This is an increase in the average GHG savings of renewable fuels from 76% in 2017/18, and from 47% since reporting began in 2008/09.
- Renewable fuels derived from UK origin feedstocks made up 16% of all renewable fuel supplied to the UK. This represents a decrease from 23% in 2017/18 but an increase from 9% in 2008/09.

Figure 1: Average greenhouse gas savings of renewable fuel (excluding ILUC), 2001/12 to 2018* (table [RF_0114](#))



2018* is a shorter reporting period running from April 15th to December 31st 2018.

RESPONSIBLE STATISTICIAN: Jack Marks 0207 944 4847 Environment.stats@dft.gov.uk

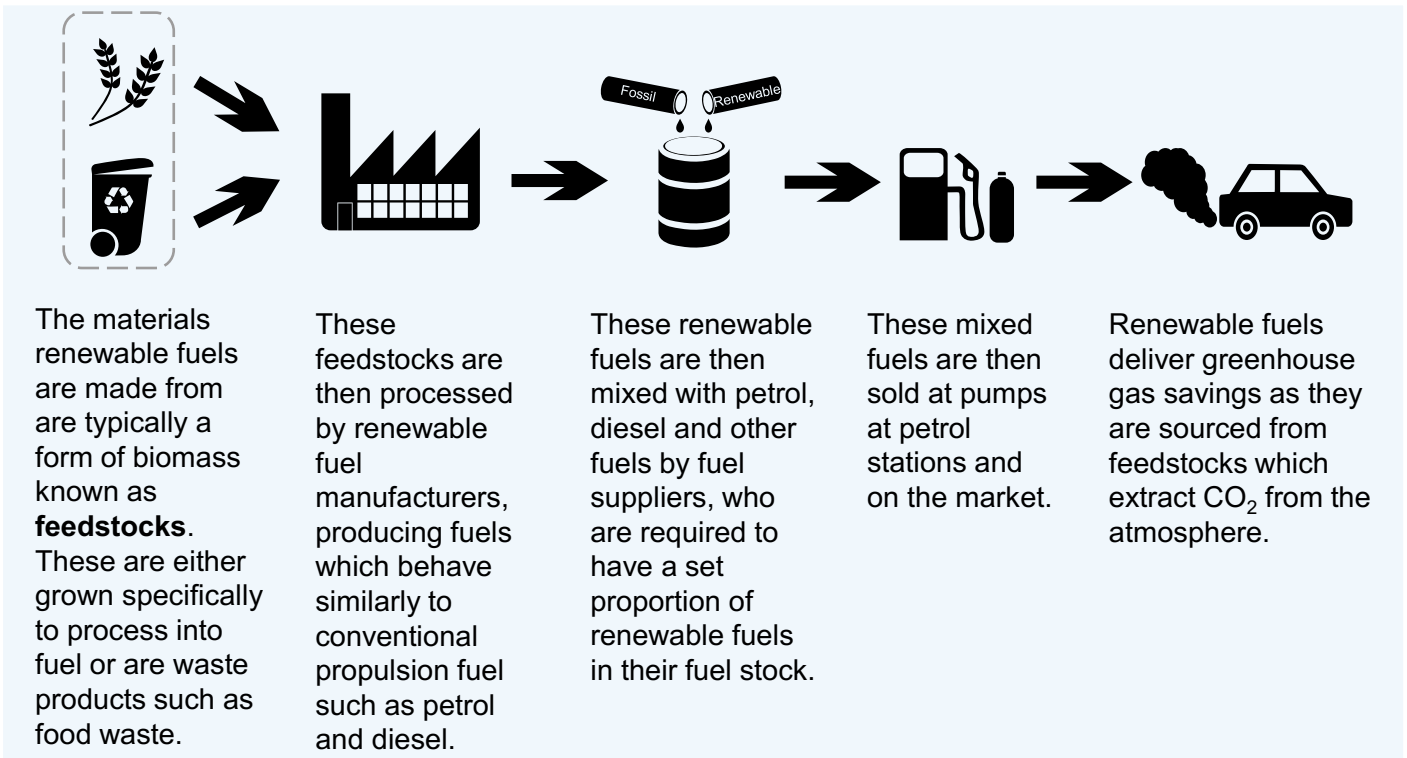
RESPONSIBLE DATA OWNER: Carly Whittaker 0777 307 2991 RTFO-compliance@dft.gov.uk

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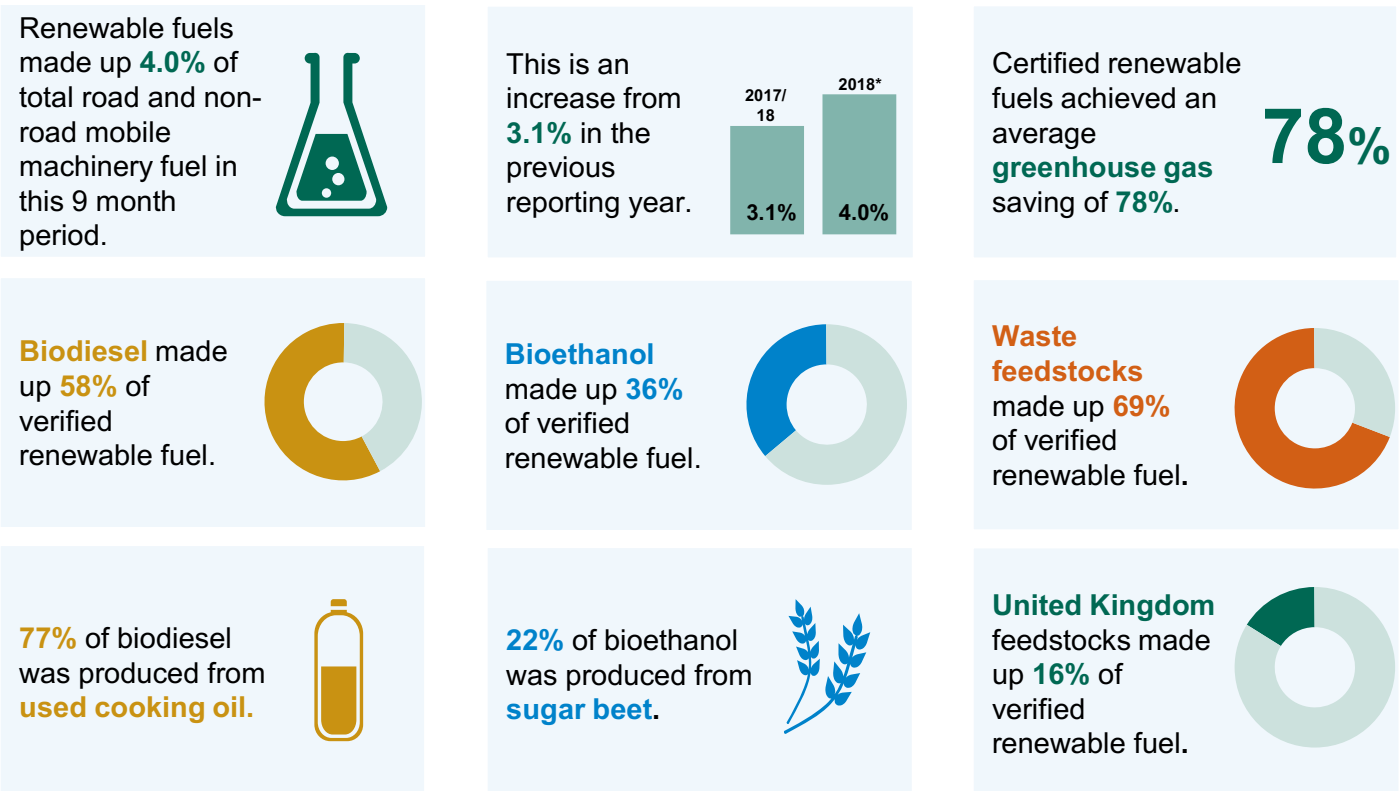
Overview

Figure 2: What is a renewable fuel?



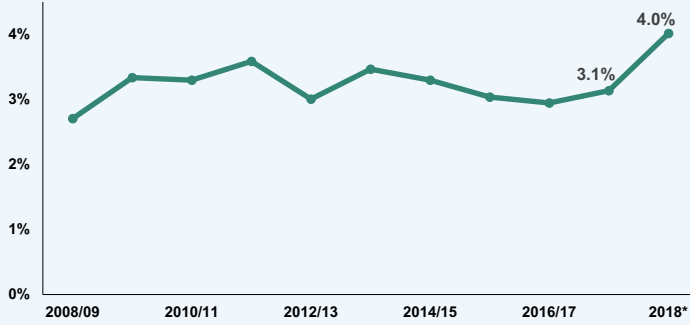
Some renewable fuels have a significantly different production process, in particular Renewable Fuels of Non-Biological Origin (RFNBOs). For more information see the Notes and Definitions.

Figure 3: Highlights – 2018*



Long-Term Trends

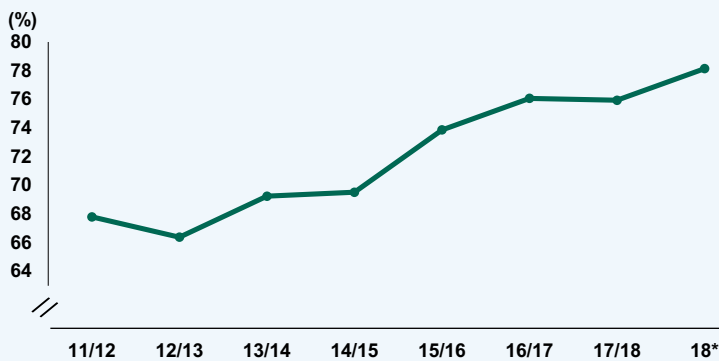
Figure 4: Renewable fuel proportion amongst all fuel



3.1% and 4%

Renewable fuel as a proportion of total fuel in 2017/18 and 2018*.

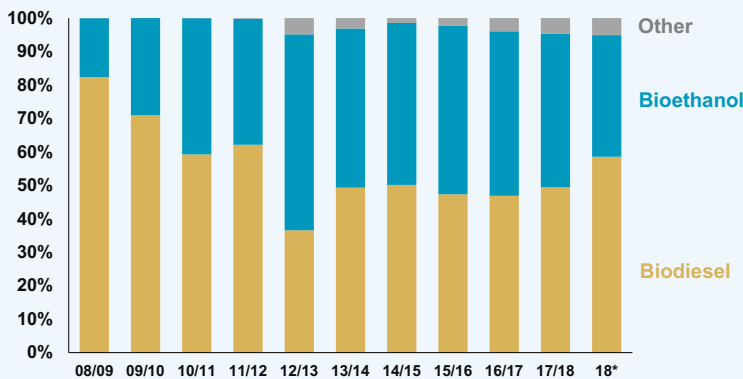
Figure 5: Greenhouse gas savings



76% and 78%

The average greenhouse gas saving from renewable fuel in 2017/18 and 2018*.

Figure 6: Renewable fuel by fuel type



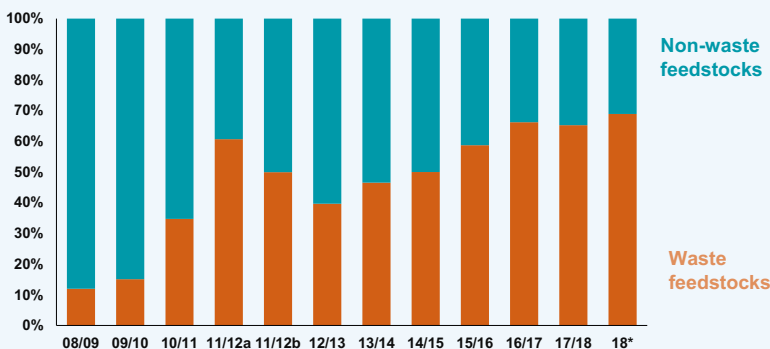
46% and 36%

Bioethanol as a proportion of renewable fuel in 2017/18 and 2018*.

49% and 59%

Biodiesel as a proportion of renewable fuel in 2017/18 and 2018*.

Figure 7: Waste feedstocks



65% and 69%

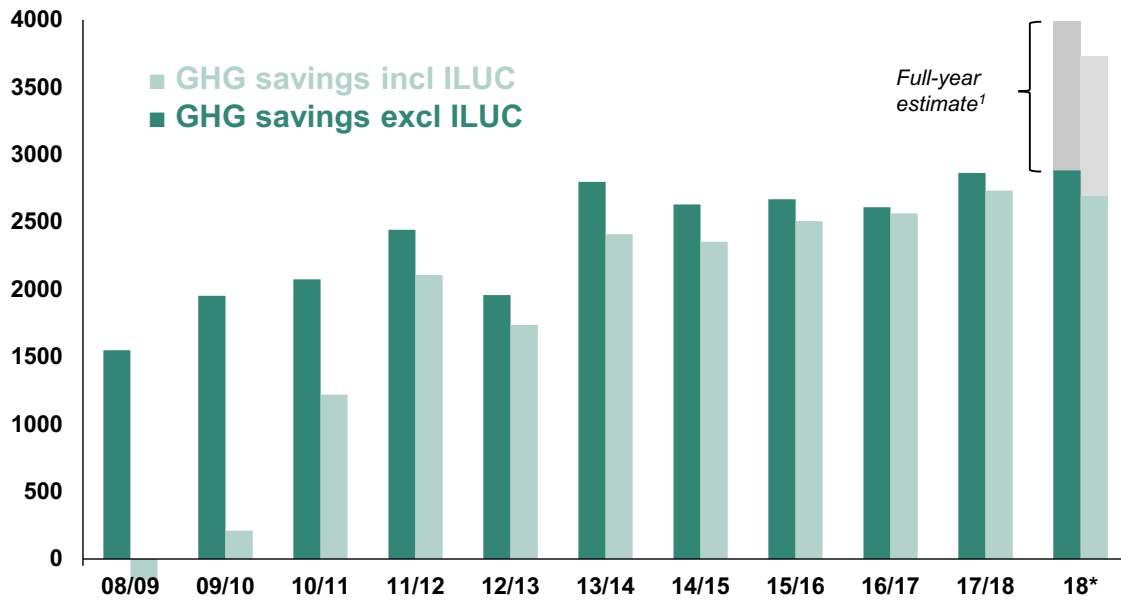
Fuels derived from waste feedstocks as a proportion of total renewable fuel in 2017/18 and 2018*.

Greenhouse Gas Savings

An aggregated GHG saving of 78% was achieved when compared to fossil fuels in this 9 month period. This amounts to a GHG saving of 2,880 kt CO₂ equivalent emissions compared to conventional fuel in this 9 month period. Accounting for emissions from **indirect land-use change (ILUC)** reduces this GHG saving to 72%.

Figure 8: Greenhouse gas saving delivered by renewable fuel supplied to the UK, 2008/09 to 2018* (table [RF_0114](#))

Total CO₂e emission savings
Kilotonnes per year

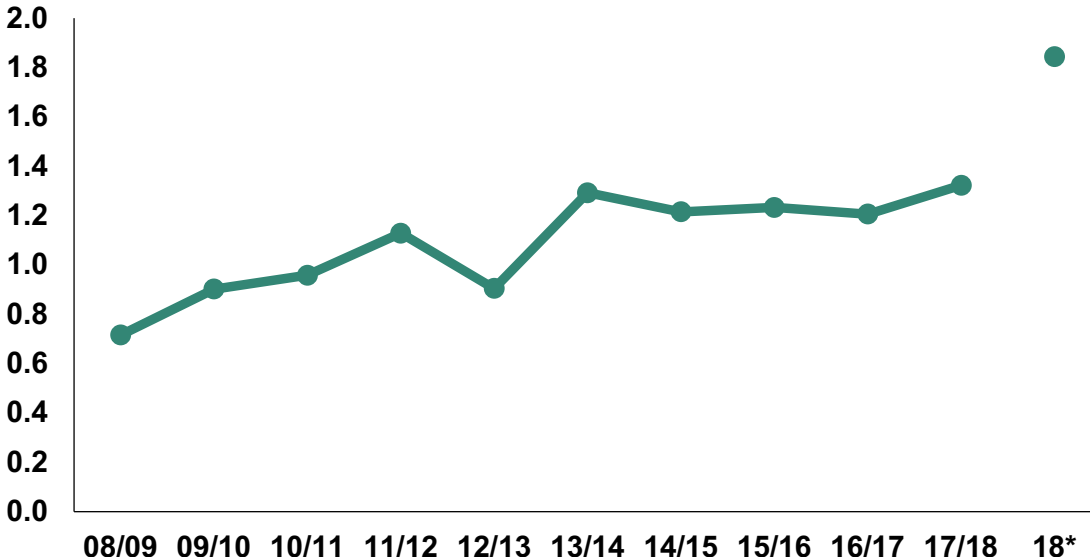


¹We estimate that if GHG savings from renewable fuel in this 9 month period were extended over a full year, total GHG savings would have been 3,990kt of CO₂ equivalent emissions.

This estimated full-year saving of 3,990kt CO₂ equivalent emissions is equivalent to taking **1.8 million cars** off the road for a full year. This drops to 1.7 million cars if ILUC is accounted for.

Figure 9: Greenhouse gas savings - equivalent number of average cars taken off the road, 2008/09 to 2018* (table [RF_0114](#))

Cars off the road
(millions)



18* is a shorter reporting period.

Greenhouse gas savings

GHG savings represent the difference in GHG emissions between using renewable fuel as opposed to the conventional fuel which they replace.

Indirect Land Use Change (ILUC)

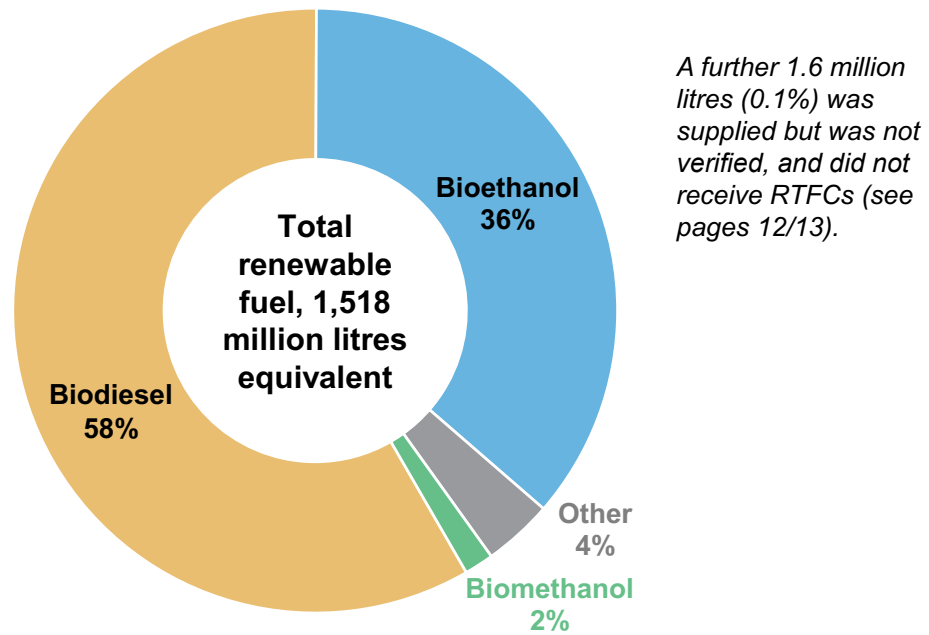
Relates to the unintended consequences of changing land use for renewable fuel production. For example the expansion of crop land for feedstocks driving deforestation elsewhere. This reduces the GHG savings from the renewable fuel produced.

Note on figures

The average car's ghg emissions was 2.17t CO₂e per year in 2017, the most recent year with final ghg estimates ([BEIS GHG Inventory](#)).

Fuel Type

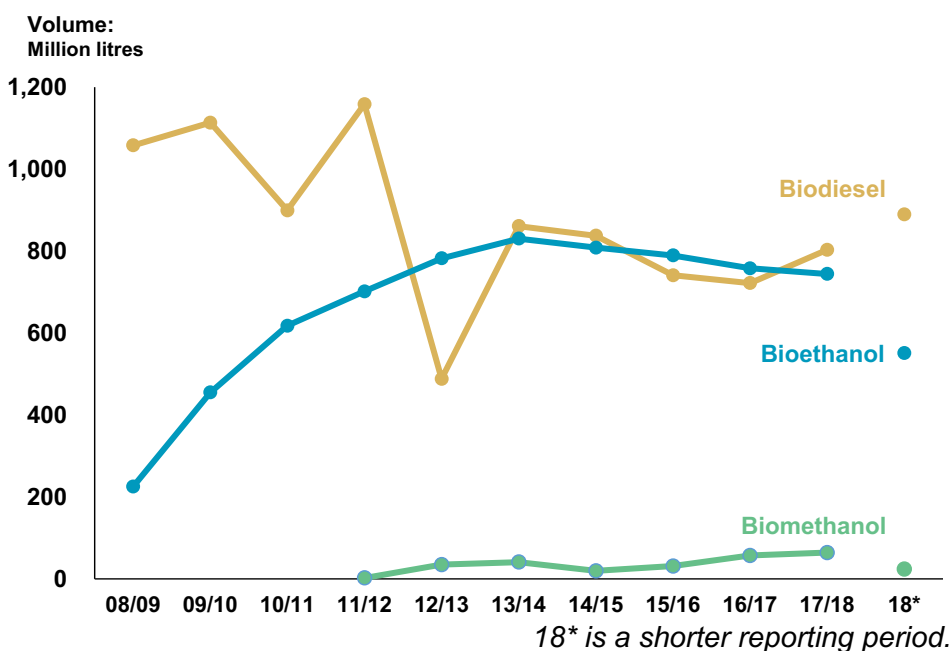
Figure 10: Volume of verified renewable fuel by fuel type (table [RF 0101](#))



The overall volume of verified renewable fuel in this 9 month period (**1,518 million litres eq.**) is less than the volume in 2017/18 (**1,623 million litres eq.**), which was a full 12 months. However, as a proportion of total road and non-road machinery fuel, renewable fuel has increased from 3.1% in 2017/18 to 4.0% in 2018*.

Of the **1,518 million litres eq.** of verified renewable fuel, **biodiesel** made up **58%**, **bioethanol** made up **36%**, and **biomethanol** made up **2%**. There were also small volumes of **biopropane**, **biomethane**, **off-road biodiesel**, **biopetrol** and **diesel origin bio**.

Figure 11: Supply of selected renewable fuels to the UK by fuel type, 2008/09 to 2018* (table [RF 0105b](#))

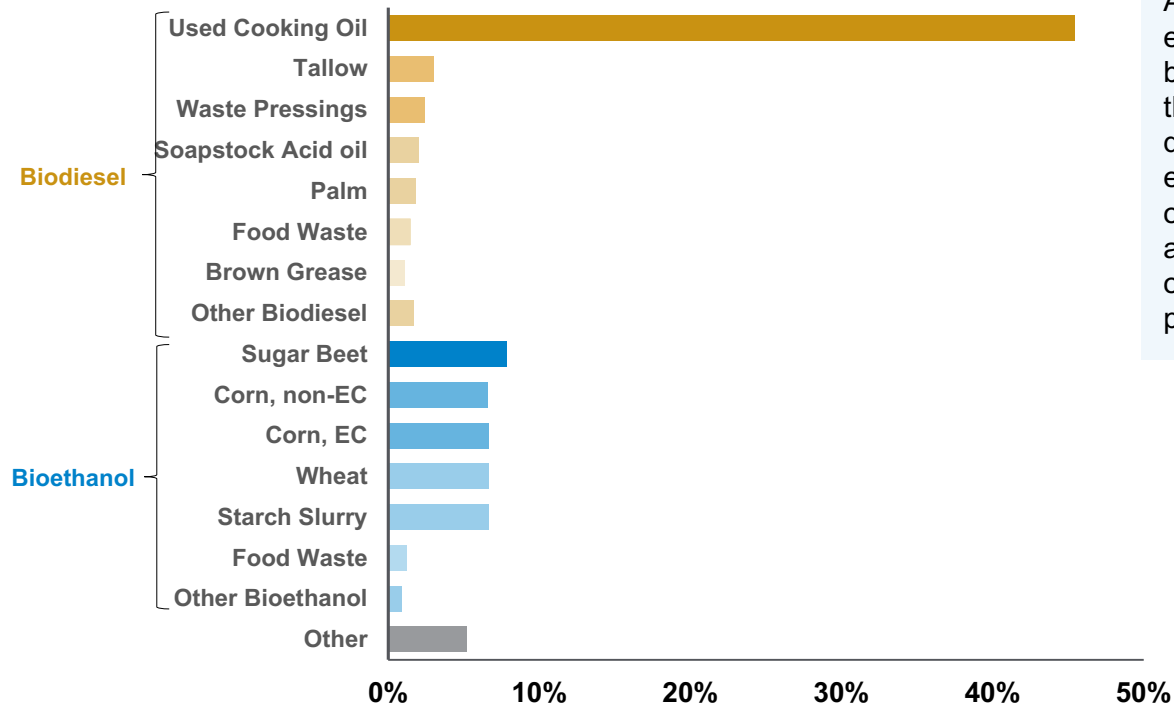


Renewable fuel trends

Volumes of **bioethanol** have been steadily declining since 2013/14. Volumes of **biodiesel** have risen to a new peak since 2011/12. The supply of **biomethanol** decreased in 2018* reversing the increasing trend seen since 2011/12. In 2018*, **biopropane** appears as a fuel type for the first time, comprising 1% of all renewable fuel.

Feedstocks

Figure 12: Supply of renewable fuel to the UK by feedstock and fuel type (table [RF_0105a](#))



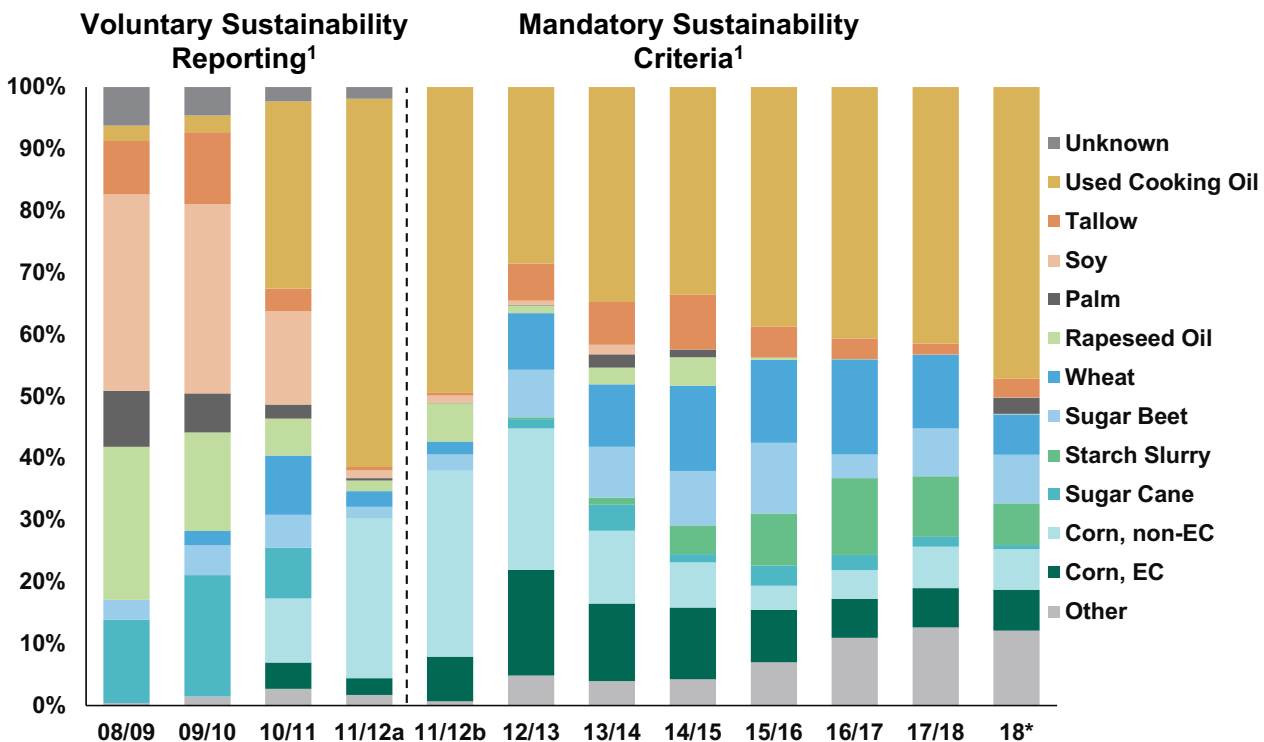
Feedstocks
Any renewable energy source or biological material that can be used directly as an energy source, or converted to a transport fuel or other energy product.

Used cooking oil made-up the largest proportion of all feedstocks in 2018*, accounting for 47% of total renewable fuel, and 77% of total biodiesel.

Sugar beet constituted the largest proportion of bioethanol feedstock, accounting for 8% of total renewable fuel, and 22% of total bioethanol.

Though the feedstock mix has changed over time, **used cooking oil** has remained the most common feedstock for renewable fuel supplied to the UK since 2010/11.

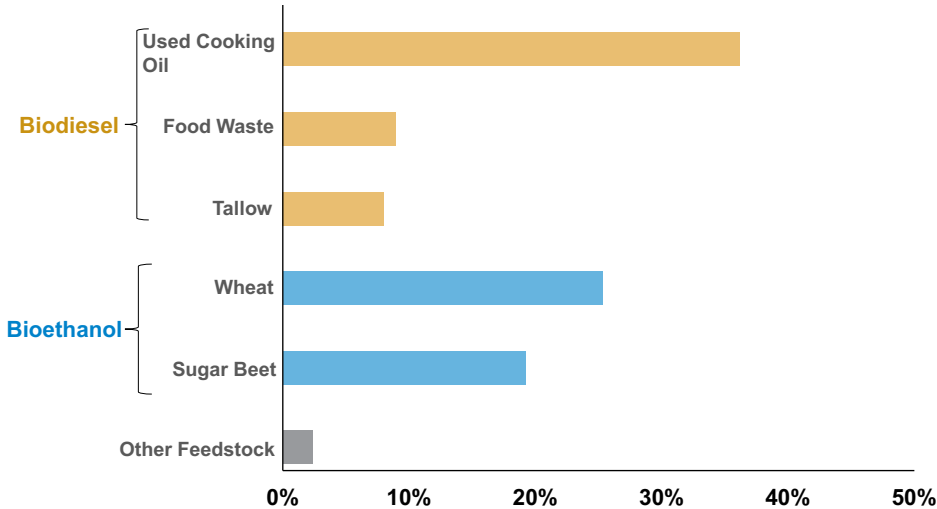
Figure 13: Supply of renewable fuel to the UK by feedstock, 2008/09 to 2018* (table [RF_0105a](#))



¹See Notes on Legislation on page 12

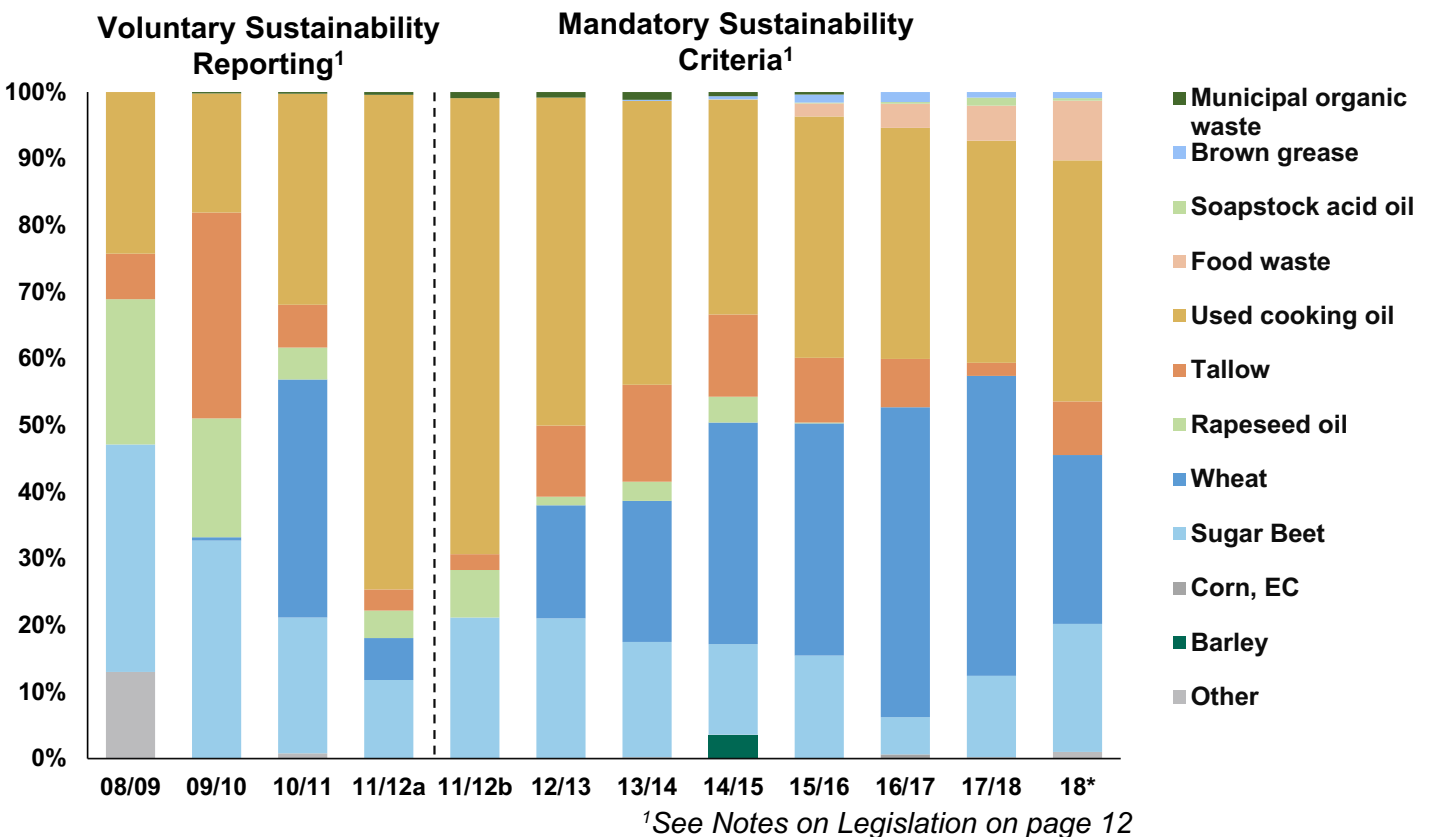
UK feedstocks

Figure 14: UK origin renewable fuel by feedstock (table [RF_0105a](#))



Of the 247 million litres eq. of verified renewable fuel produced from UK origin feedstock, the most common renewable fuel by feedstock and fuel-type was biodiesel from used cooking oil (89 million litres, 36% of renewable fuel from UK origin feedstock). This was followed by bioethanol from wheat (63 million litres, 25% of renewable fuel from UK origin feedstock).

Figure 15: UK origin renewable fuel by feedstock, 2008/09 to 2018* (table [RF_0105a](#))



Renewable fuels from UK feedstocks made up **16%** of total renewable fuels in 2018*. **55%** of UK origin renewable fuel was produced from a **waste feedstock**, down from **57%** in 2017/18.

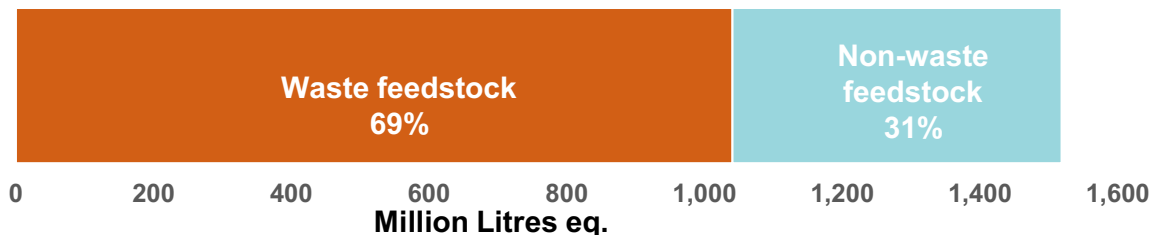
Waste Feedstock and Origin

Waste feedstocks are further incentivised under the RTFO, with the awarding of **double-counting** certificates for renewable fuel derived from them. Renewable fuel from waste feedstock totalled 1,040 million litres eq. in 2018*. Waste feedstocks include large quantities of used cooking oil, as well as brown grease, both dry and wet manure, municipal organic waste, waste agricultural products such as sugar beet tops and tails, and sewage sludge.

Waste Feedstocks

Renewable fuel produced from waste feedstocks typically delivers greater greenhouse gas savings than fuel derived from crop-derived feedstocks. For this reason, they are encouraged under the RTFO and are typically awarded double counting certificates.

Figure 16: Proportion of waste and non-waste feedstock amongst verified renewable fuel (table [RF_0105a](#))



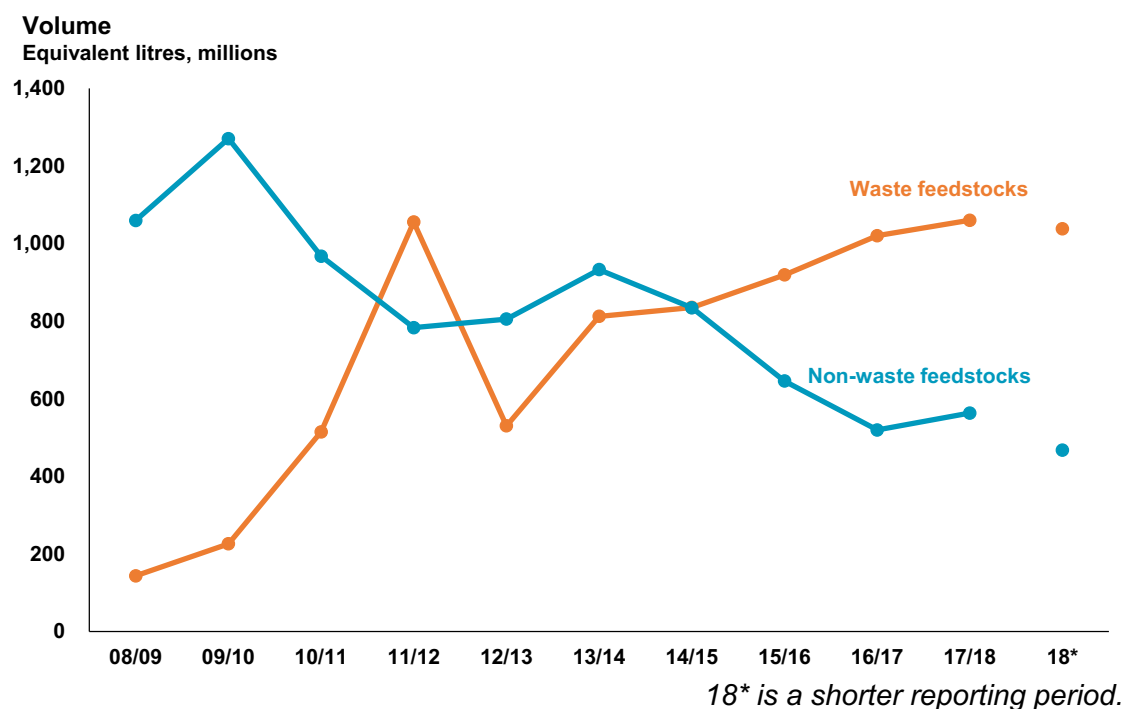
Trends

Waste-derived fuels have been increasing over time. Though a smaller volume was supplied this period than the previous reporting period (this being a shorter period) waste feedstocks have increase from 65% in 2017/18 to 69% to continue the trend of the proportion of waste-derived fuels increasing since 2012/13.

Double Counting

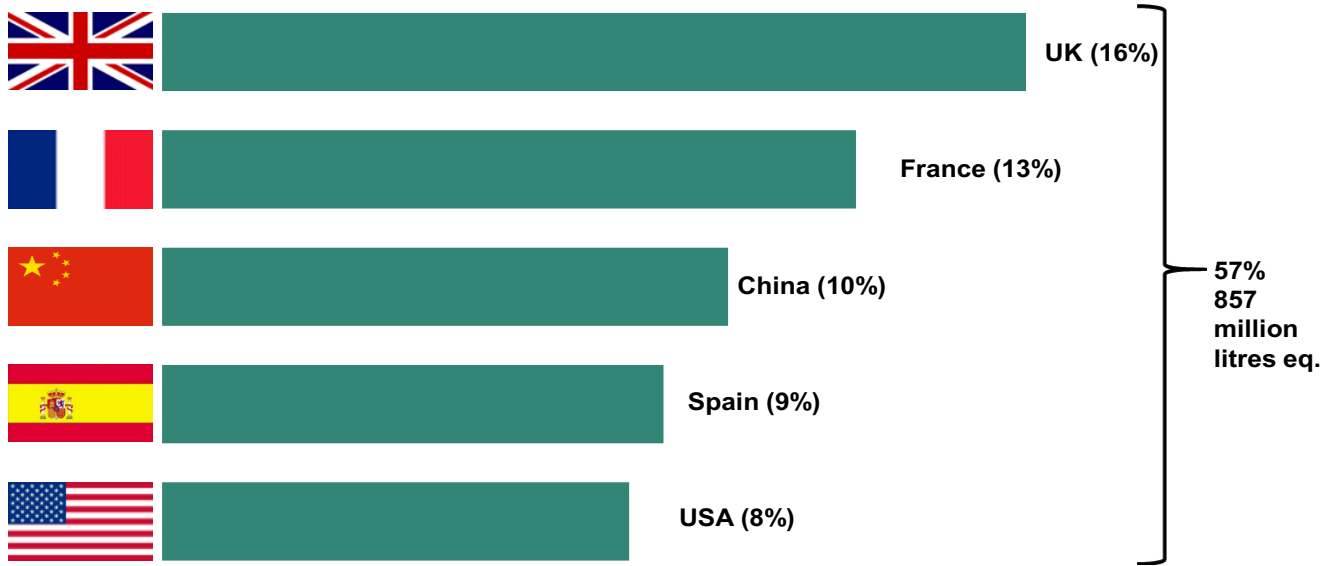
Renewable fuel produced from waste feedstocks, crop residues and dedicated energy crops are incentivised by awarding double the RTFCs per litre or kilogram supplied.

Figure 17: Renewable Fuels from waste and non-waste feedstock, 2008/09 to 2018* (table [RF 0105b](#))



Country of origin

Figure 18: Top 5 countries supplying verified renewable fuel to the UK in 2018*
(table [RF 0105a](#))

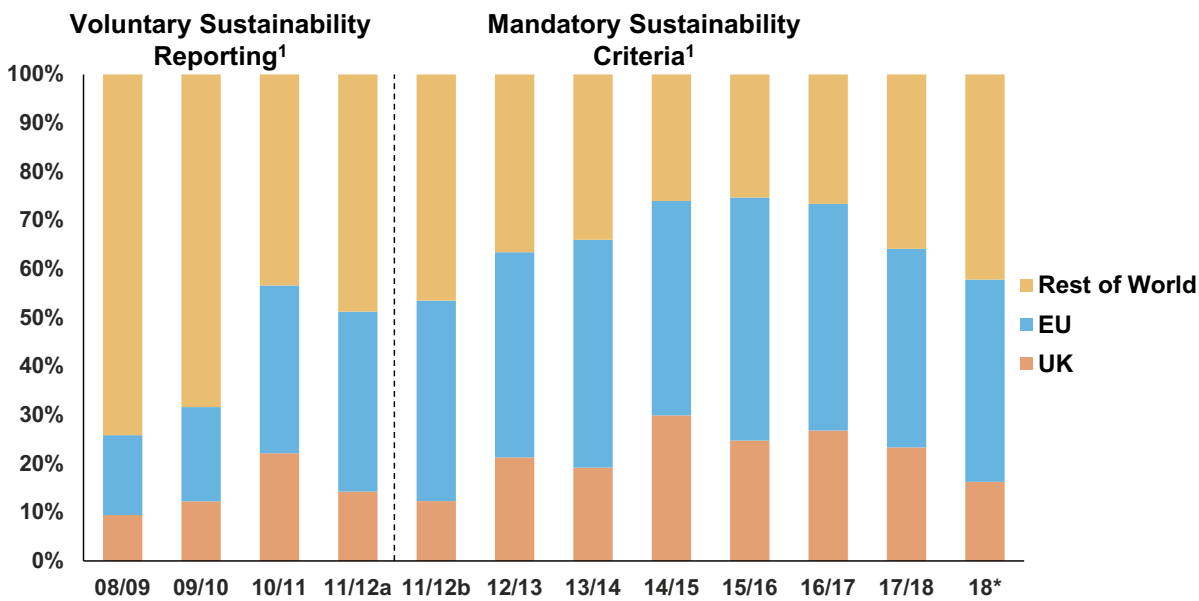


The top 5 feedstock supplying countries together accounted for 57% of verified renewable fuel in this period, with UK origin feedstocks making up 16%.

Of the 1,518 million litres eq. of verified renewable fuel supplied in this period, the most widely reported source for biodiesel supplied to the UK (by feedstock and country of origin) was used cooking oil from China (155 million litres, 10% of verified renewable fuel, 17% of total biodiesel).

The most widely reported source for bioethanol supplied to the UK (by feedstock and country of origin) was non-EC corn from the Ukraine (79 million litres, 5% of verified renewable fuel, 15% of total bioethanol).

Figure 19: Proportion of renewable fuel supplied to the UK by region, 2008/09 to 2018*
(table [RF 0105b](#))



There was an increase in the proportion of renewable fuel from outside the EU from 36% in 2017/18 to 42% in 2018*. This was driven largely by increases in biodiesel from used cooking oil from China and Malaysia, and bioethanol from non-EC corn from Ukraine.

The proportion of renewable fuel from the UK decreased from 23% in 2017/18 to 16% in 2018*.

Figure 20: Country of origin of all renewable fuel feedstocks, 2018* (table [RF 0105a](#))

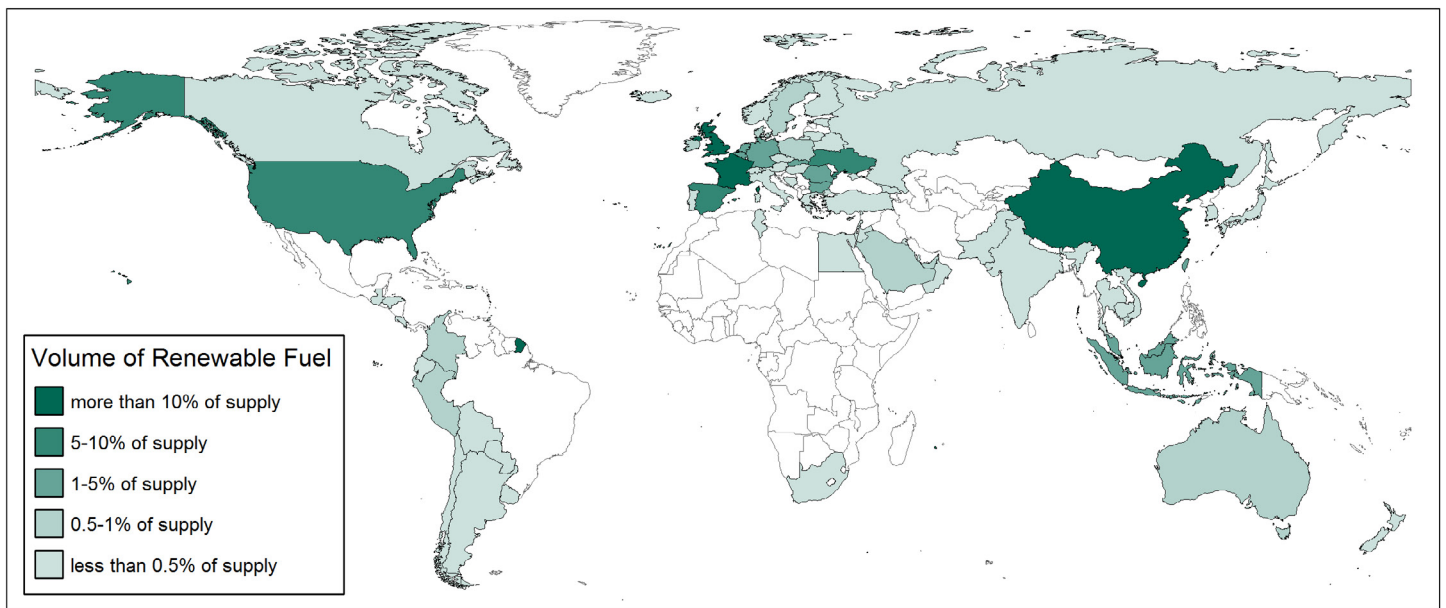


Figure 21: Country of origin of all biodiesel feedstocks, 2018* (table [RF 0105a](#))

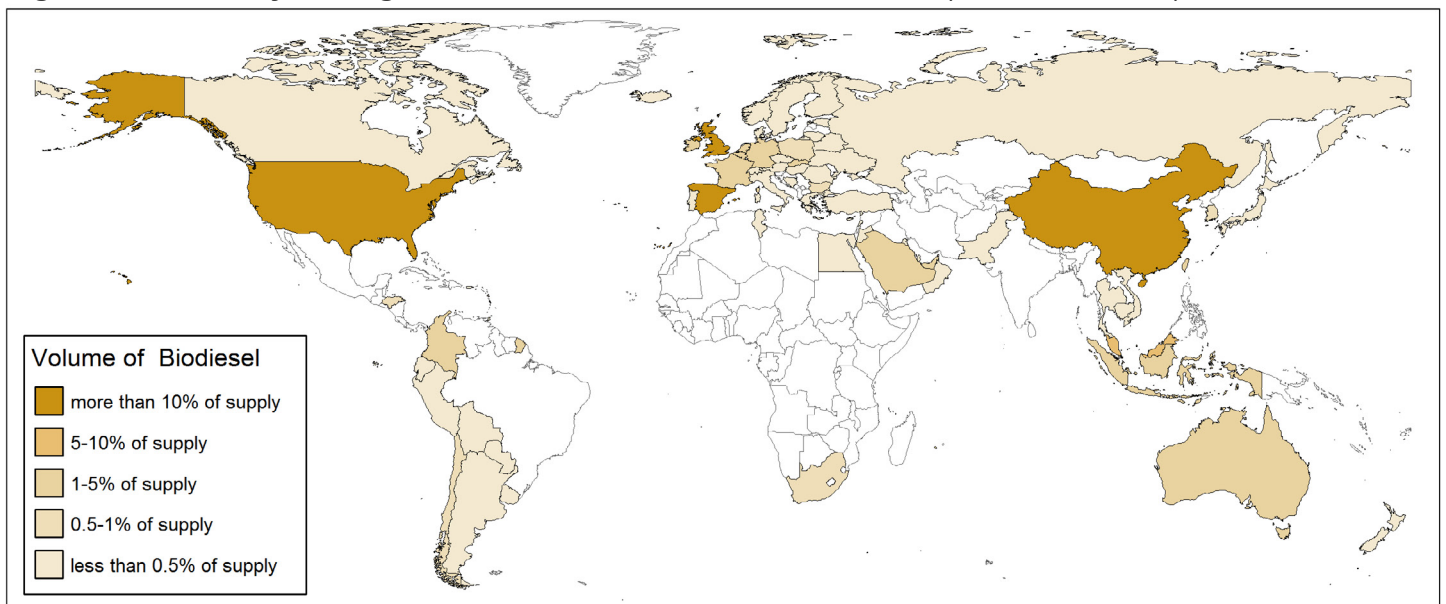
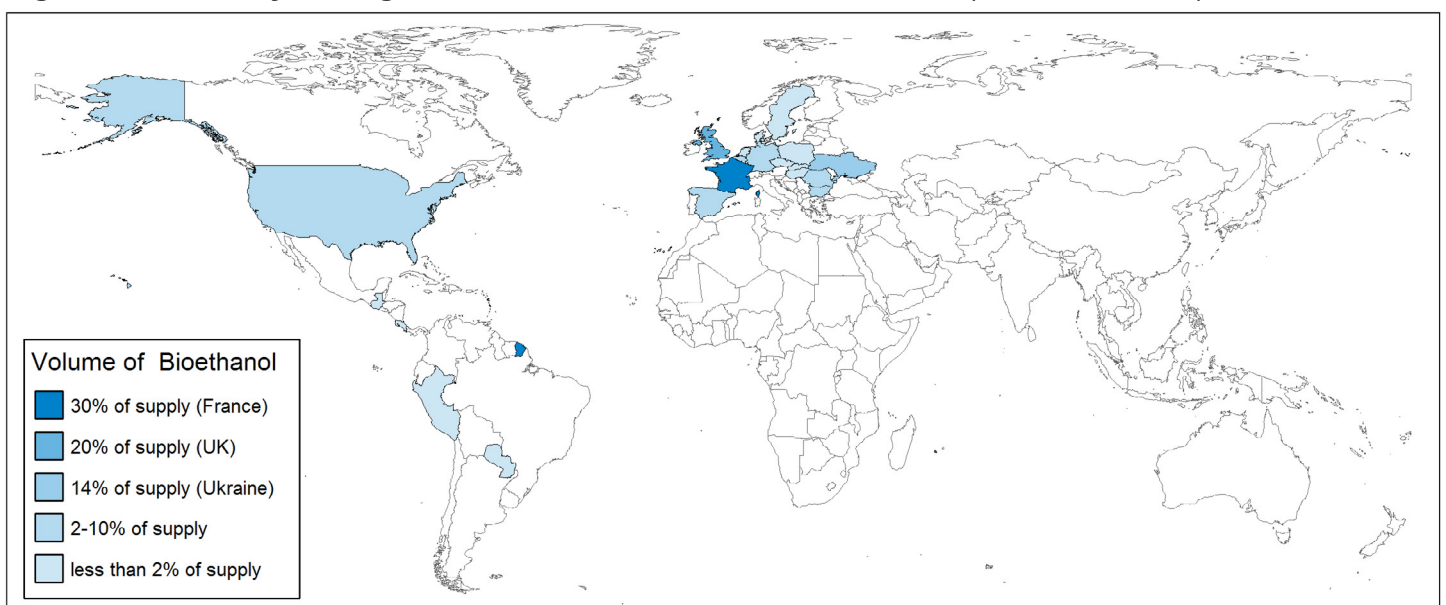


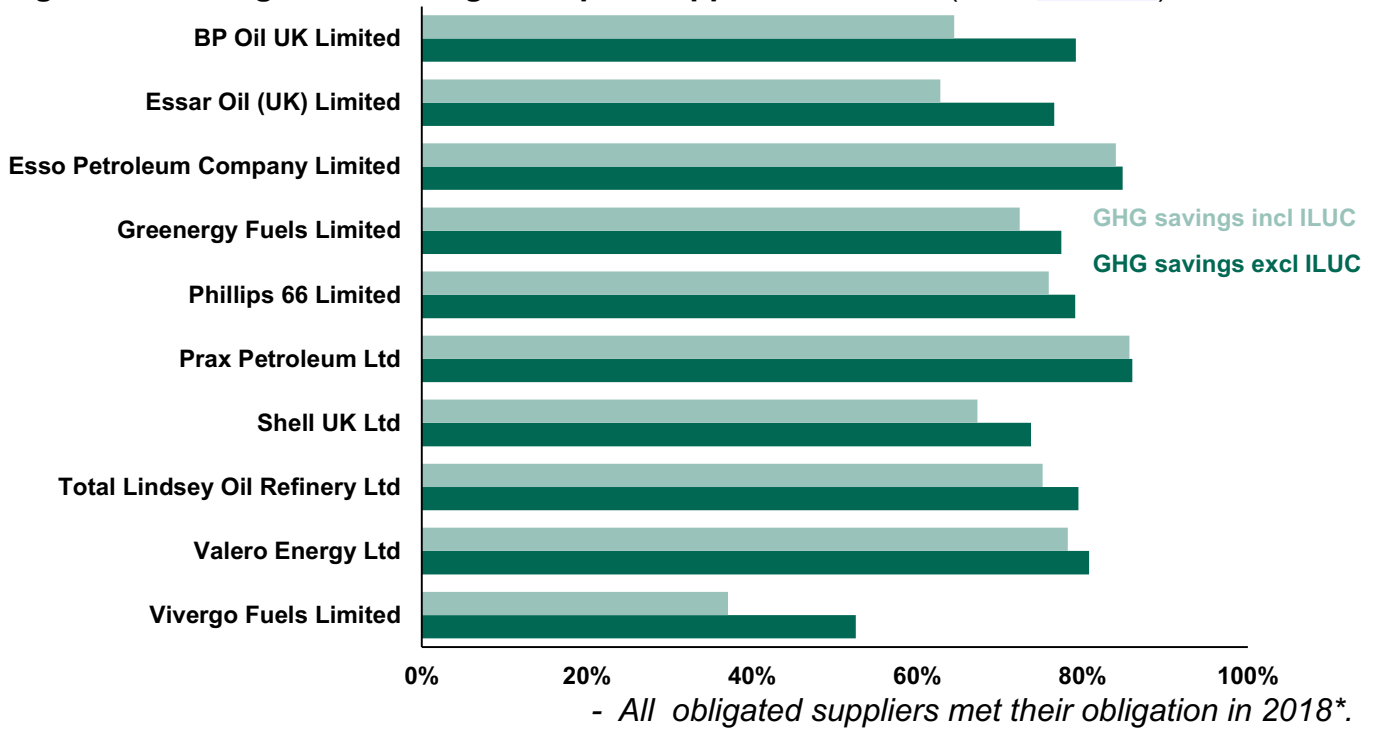
Figure 22: Country of origin of all bioethanol feedstocks, 2018* (table [RF 0105a](#))



Supplier Information

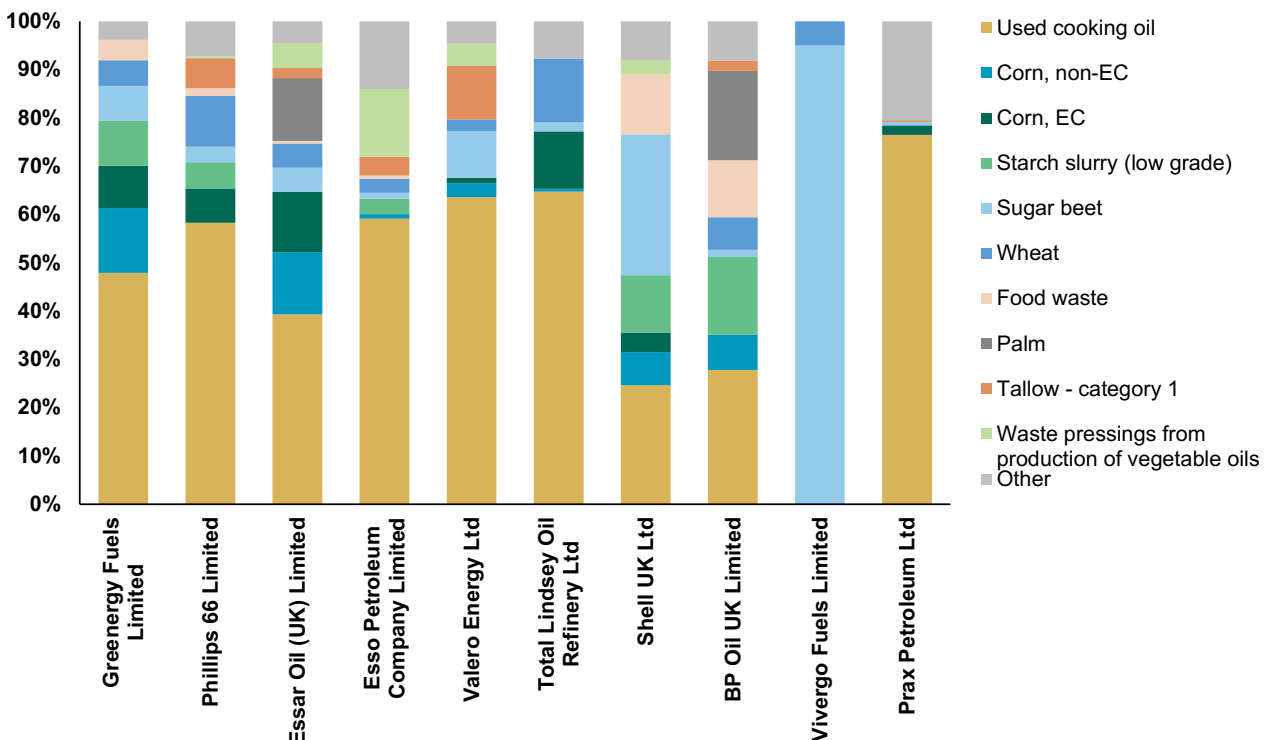
The market for renewable fuel remains diverse, with 30 different suppliers supplying renewable fuel to the UK market in this reporting period. This is an increase on the 27 companies that supplied renewable fuel to the UK in the previous reporting period.

Figure 26: Average GHG savings of top 10 suppliers for 2018* (table [RF 0110](#))



The top 5 suppliers of renewable fuel supplied 70% of the UK's supply of renewable fuel in this period.

Figure 27: Feedstock mix of top 10 suppliers for 2018* (table [RF 0108a](#))



Notes on Legislation

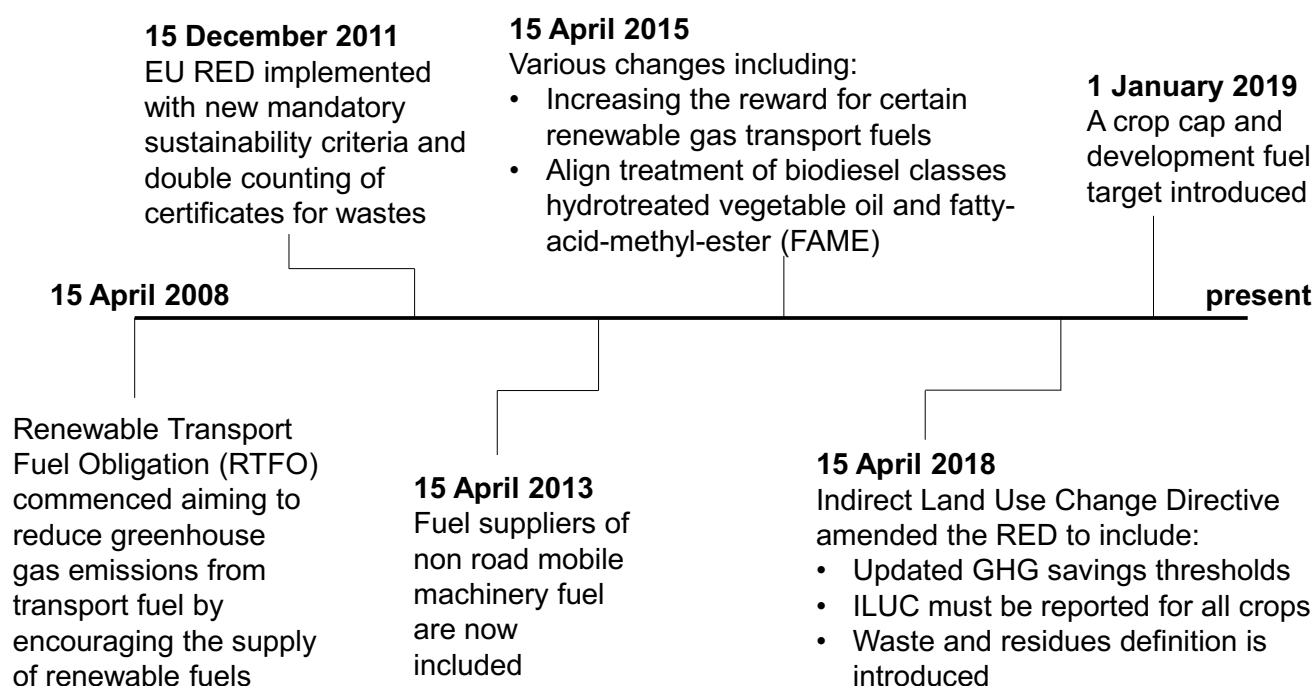
The **Renewable Transport Fuel Obligation Order** (RTFO order) is the UK legislation which aims to ensure that at least 10% of transport fuel comes from renewable sources by 2020.

Some of the key aspects of the RTFO Order legislation are:

1. Placing an obligation on all fuel suppliers providing more than 450,000 litres of fuel to ensure that a proportion of the fuel they supply is renewable.
2. Obligated suppliers may 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.
3. RTFCs are gained by supplying sustainable renewable fuels. In 2018*, such suppliers must redeem RTFCs for 6.24% of their share of total fuel (though the absolute proportion of renewable fuels in their fuel mix is typically lower due to some renewable fuels receiving double-counting certificates). This will increase to 8.5% in 2019, and 12.4% by 2032.
4. One certificate may be claimed for every litre of sustainable renewable fuel supplied.
5. Incentivising certain fuels by double rewarding those renewable fuels. This process, known as double-counting, awards double the certificates per litre supplied for fuel from certain wastes or residues, fuel from dedicated energy crops, and RFNBOs compared to renewable fuel from other feedstocks.

The RTFO is the UK's legislation that implements the transport aspects of the EU **Renewable Energy Directive** (RED). The RED is the EU policy covering the production and promotion of energy from renewable sources.

Figure 28: Timeline of significant regulatory changes to renewable fuel regulation



As the RTFO has been altered over time, components of the UK renewable fuel supply have altered significantly to reflect these changes. The most significant changes have been the introduction of mandatory sustainability criteria and double-counting certificates for wastes in 2011 and the introduction of a development fuel sub-target in 2019 alongside a crop cap. For further information on the RTFO, RED, or double-counting, refer to the background information.

Certificates Awarded Under the RTFO

Renewable Transport Fuel Certificates (RTFCs)

RTFCs are awarded to transport fuel suppliers whose renewable fuel meets the sustainability criteria. **2,559 million RTFCs** have been issued to 1,518 million litres eq. of renewable fuel for this 9 month period.

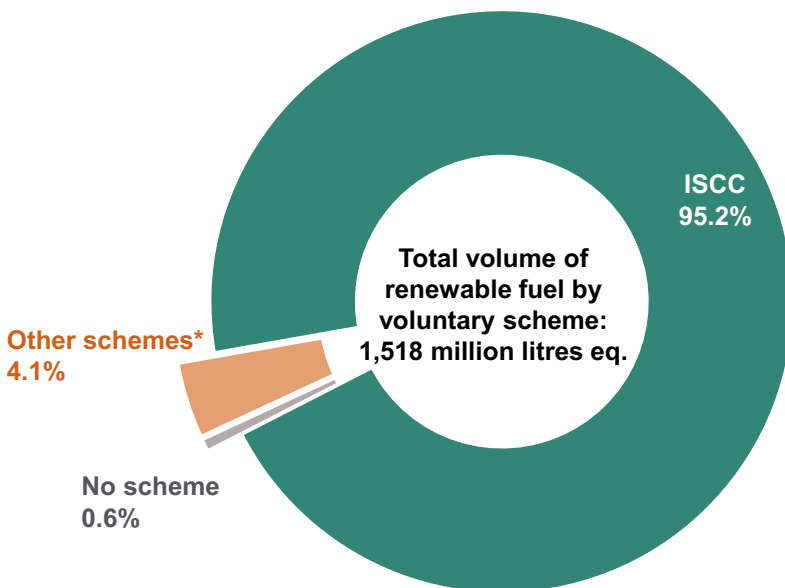
Double-counting feedstock

- Of the 2,559 million RTFCs awarded to renewable fuel that met the sustainability criteria, **2,081 million** were issued to fuel from a waste/residue or “Double Counting” feedstock.
- A further 0.8 million litres of renewable fuel went unverified (0.1% of total renewable fuel) and did not receive RTFCs in this period.

Figure 29: Renewable fuel to which RTFCs have been issued (table [RF 0102](#))



Figure 30: Proportion of renewable fuel reported via a voluntary scheme 2018* (table [RF 0106](#))



*Other voluntary schemes: RSB, 2BSVS, Redcert EU.

Schemes for certification and traceability

- Almost all (**99%**) of renewable fuel feedstocks that have met the sustainability criteria have been certified by a voluntary scheme.
- Of the current voluntary schemes listed, the International Sustainability and Carbon Certification scheme (ISCC) certified **95%** of all UK renewable fuel in 2018*.
- The uptake of voluntary schemes has remained above **99%** for the past seven years, compared to **20%** in the first year of the RTFO.

Sustainability Criteria

To receive Renewable Transport Fuel Certificates, fuels supplied must meet the sustainability criteria set out in the amended [Renewable Transport Fuel Obligations Order 2007](#) and the [RTFO Carbon and sustainability guidance](#). Renewable fuel must deliver minimum GHG savings and must not originate from land with high biodiversity value or carbon stock.

What is a voluntary scheme?

Voluntary schemes verify that renewable fuel supplied to the UK meets compliance with the EU’s biofuel sustainability criteria, which is a prerequisite for RTFCs to be issued.

Statistical Tables

Tables for this release are available on [GOV.UK](#).

Background Information

Sources of data in this report

Data on volumes of fuel, Renewable Transport Fuel Certificates (RTFCs) (issues, redemptions, surrenders, transfers) and Carbon & Sustainability (C&S) are held by the Renewable Transport Fuel Obligation (RTFO) Administrator on the RTFO Operating System (ROS). Fuel volume data is submitted on a monthly basis by fuel suppliers to the RTFO Administrator and validated against HMRC duty payment data.

C&S data is only reported once RTFCs have been issued. There will therefore be a difference between the volume of renewable fuel supplied and the number of RTFCs issued/C&S data available. The final report for an obligation period will show the final position.

Renewable fuel mix reporting

The data reported by fuel suppliers under the RTFO is in line with EU rules on mass balance. A mass balance system requires suppliers throughout the supply chain to account for their product on a units in - units out basis, but does not require physical separation of certified feedstock or fuel from uncertified material. It ensures that for every unit of sustainable renewable fuel sold, the corresponding sustainable feedstock has been produced. This can mean the actual feedstock mix might differ from that reported. Nonetheless, the feedstocks and renewable fuels reported in this document represent those that are incentivised and rewarded under the RTFO.

Shortened reporting period

This reporting period is a shortened period, running from 15th April 2018 to 31st December 2018. This is to align the reporting year with the calendar year for future publications. As such, the next reporting year runs from 1st January 2019 to 31st December 2019.

Strengths and weaknesses of the data

C&S data is verified by independent verifiers and checked against the RTFO Guidance by the Administrator.

The Administrator validates volume data submitted by fuel suppliers against that held by HMRC regarding fuel duty liabilities. Whilst the Administrator validates volume data against HMRC data at a company level, there is not an exact match between the volume of fuel reported in this report and the volume of fuel reported in HMRC's Hydrocarbon Oils bulletin. For further information see the notes and definitions.

Whilst the Administrator validates volume data against HMRC data at a company level, there is not an exact match between the volume of fuel reported in this report and the volume of fuel reported in HMRC's Hydrocarbon Oils bulletin. Reasons for this include:

Official Statistics

Official Statistics are produced to high professional standards set out in the Code of Practice for Official Statistics. However, these statistics have not yet been assessed by the Office for Statistics Regulation.

Details of ministers and officials who received pre-release access to these statistics up to 24 hours before release can be found in the pre-release access list.

Further Details

Further information on the data can be found in the [Notes and Definitions](#).

Related Information

Previously published reports can be found on the DfT website:

<https://www.gov.uk/government/organisations/department-for-transport/series/renewable-fuel-statistics>.

The publication timetable can be found at Annex B.



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Annex A: Renewable Fuel Statistics Content of Tables

Reports are published quarterly.

This is the final report for this obligation period and reports on the carbon and sustainability performance of individual suppliers. These reports are available online at:

<https://www.gov.uk/government/collections/renewable-fuel-statistics>

Table 1 - Typical content of renewable fuel statistics tables

Table	Previously reported as	Description	Provisional Report	Final Report
RF_0101	RTFO_01	Volume of fuel supplied	Yes	Yes
RF_0102	RTFO_02	Fuels issued with RTFCs and number of RTFCs issued	Yes	Yes
RF_0103	RTFO_03	RTFC balance by obligation period	Yes	Yes
RF_0104	RTFO_04	RTFC trades to date by company type	Yes	Yes
RF_0105a	RTFO_05	RTFO wide carbon and sustainability data	Yes	Yes
RF_0106	RTFO_06	RTFO wide voluntary scheme data	Yes	Yes
RF_0105b	n/a	Feedstock and country of origin over time	No	Yes
RF_0107	RTFO_07	Performance against obligation by supplier	No	Yes
RF_0108a	RTFO_08a	Feedstock by supplier as a % of their supply	No	Yes
RF_0108b	RTFO_08b	Country of origin by supplier as a % of their supply	No	Yes
RF_0109	RTFO_09	% of renewable fuel that was sustainable by supplier	No	Yes
RF_0110	RTFO_10	Carbon and sustainability data by supplier	No	Yes
RF_0111	RTFO_11	RTFO wide fuel supply by volume and energy	No	Yes
RF_0112	RTFO_12	Civil penalties and other non-compliance	No	Yes
RF_0113	RTFO_13	Performance against GHG reporting requirements	No	Yes
RF_0114	n/a	Total greenhouse gas savings over time	No	Yes

NOTE: This reporting period covers only 9 months, moving reporting schedule to align with the calendar year for 2019 and onwards. As a result, there is no fifth provisional report for this period. Instead, this fifth report is the final report for this period and contains RF tables 0107 - 0113.

Annex B: Renewable Fuel Statistics Reporting Timescale

Table 2 – Publication dates and contents of each report

	2018 (April to December) statistics	2019 statistics	2020 statistics
August 2019	Fourth Provisional Report	First Provisional Report	
November 2019	Final Report	Second Provisional Report	
February 2020		Third Provisional Report	
May 2020		Fourth Provisional Report	
August 2020		Fifth Provisional Report	First Provisional Report
November 2020		Final Report	Second Provisional Report

Highlighted reports indicate summary report for the period.