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Department for Transport

Official Statistics

Renewable fuel statistics 2022: final report

Published 8 November 2023

Contents

This publication is available at https://www.gov.uk/government/statistics/renewable-fuel-statistics-2022-final-report/renewable-fuel-statistics-2022-final-report

About this release

This final release covers the supply of renewable fuel in 2022, based on data available on 26 September 2023, which has been reported under the Renewable Transport Fuel Obligation (RTFO).

The RTFO scheme reduces greenhouse gas emissions from transport fuels by setting annual obligations on fuel suppliers to supply sustainable renewable fuels.

Renewable fuels are often blended with conventional fuels such as petrol or diesel, but as they come from renewable feedstocks including waste products and residues, their overall greenhouse gas emissions are lower when we consider the entire life cycle of the fuel.

Impact of the coronavirus (COVID-19) pandemic

The timeline of this publication series includes periods of coronavirus (COVID-19) related restrictions. As such, figures in this release may be affected and should be interpreted with caution.

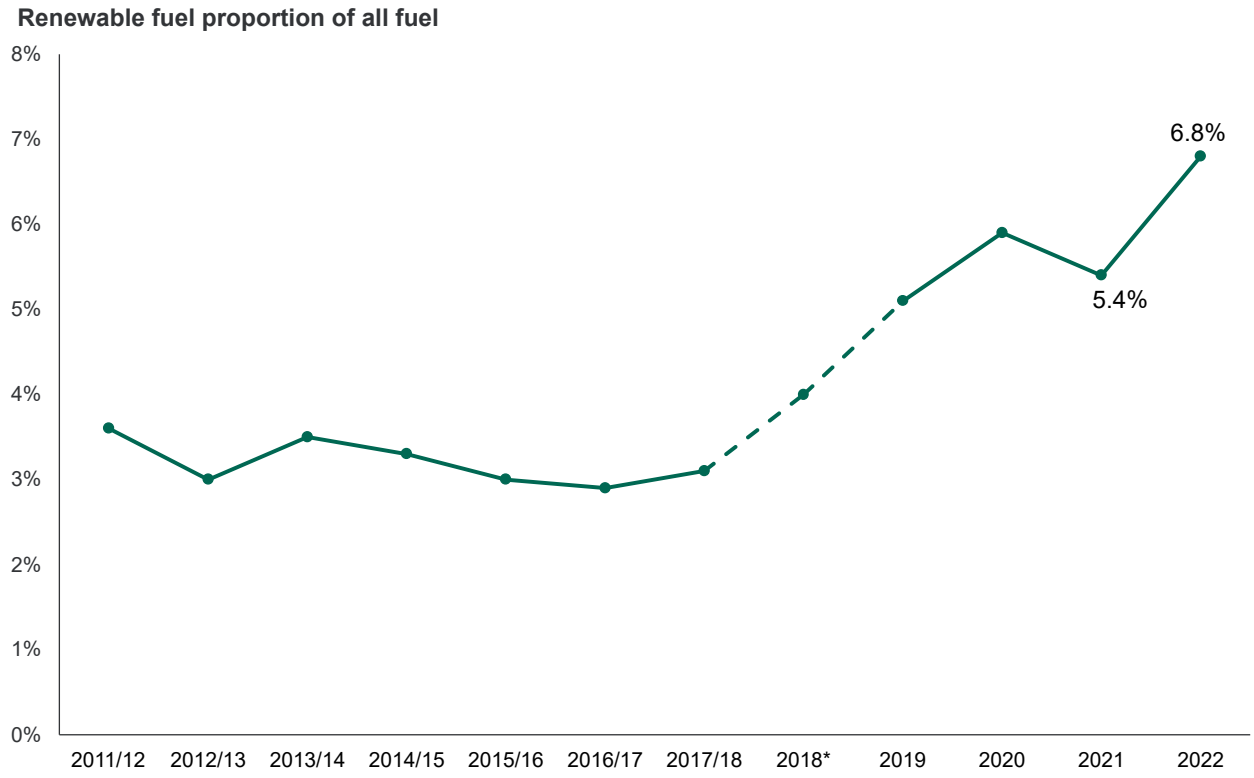
Changes to methodology

Since 2022, the RTFO GHG methodology has used 94 grams of CO2 (equivalent) per MJ of energy contained in the fuel (gCO2eq/MJ) to calculate GHG savings, in accordance with the latest available evidence. Until 2021, average greenhouse gas (GHG) savings from renewable fuels were calculated using the value of 83.8 gCO2eq/MJ to represent the average figure of fossil fuel. The method for calculating the average GHG savings uses a weighted average to take account of the volume and energy content of the fuel rather than a simple average across fuel consignments as done in previous years. These are the reasons why the time series charts and numbers relating to GHG savings in this report are different from the renewable fuels 2021 final report (https://www.gov.uk/government/statistics/renewable-fuel-statistics-2021-final-report/renewable-fuel-statistics-2021-final-report). The charts affected in particular in this report are: Figure 1, Figure 4, Figure 5, Figure 16 and Figure 19. More detail, including the impact of these changes, can be found in an explanatory changes to methodology (https://www.gov.uk/government/statistics/renewable-fuel-statistics-2022-final-report/renewable-fuel-statistics-2022-final-report#background-information) section in this report.

In 2022:

- 3,325 million litres equivalent (eq.) of renewable fuel have been supplied, which constitutes 6.8% of total road and non-road mobile machinery fuel for the year in the UK
- certificates have been issued to 3,316 litres eq. (99.7% of all renewable fuel) under the Renewable Transport Fuel Obligation (see Background Information)
- of these 3,316 litres eq., an average greenhouse gas (GHG) saving of 82% was achieved when compared to fossil fuel use. This drops to 77% when indirect land-use change (ILUC) is accounted for
- 11% of all verified renewable fuel supplied to the UK in this period was produced from UK-origin feedstocks

Figure 1: Proportion of renewable fuel use for all transport fuel, financial year ending 2012 to 2022 (table RF 0101 (https://www.gov.uk/government/statistics/renewable-fuel-statistics-2022-final-report))



*This reporting period is 9 months instead of the conventional 12-month.

Notes on time series

In previous versions of this report, the start of the reporting period was the financial year ending 2009 (2008 to 2009). From this report going forward, the start of the reporting period for renewable fuel statistics will be the financial year ending 2012 (2011 to 2012).

Initial reporting periods were presented as financial years, until the financial year ending 2018 (2017 to 2018), after which the data periods were presented as calendar years. To enable this transition, the first 3 months of 2018 are included in the financial year ending 2018 (2017 to 2018) and the last 9 months in a standalone 9 month reporting period, which is shown as 2018* in the publication, tables, and charts. From 2019 onwards, figures are reported on a 12 month calendar basis. Care should be taken when comparing data across these periods.

Description of Figure 1:
This is a line chart which shows the use of renewable fuel as a proportion of all transport fuel, from the financial year ending 2012 to 2022. The proportion of renewable fuel remained at around 3% from financial year ending 2012, until financial year ending 2018. In 2022, this proportion was 6.8%, higher than the previous reporting period (5.4% in 2021).

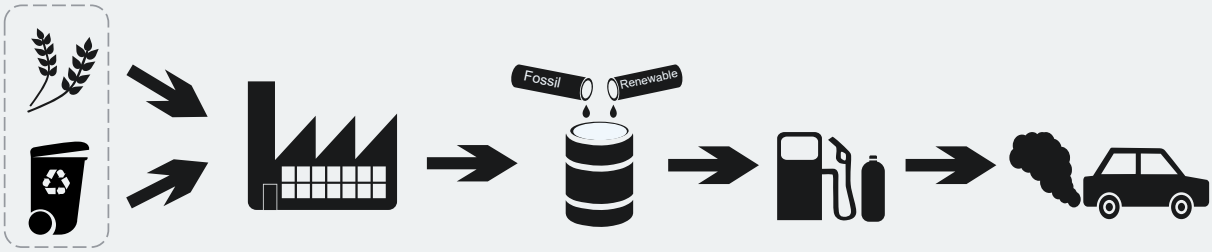
Verified renewable fuel

Verified renewable fuel refers to fuel that has received Renewable Transport Fuel Certificates (RTFCs) for having met the Sustainability Criteria. For more information, see the notes and definitions (https://www.gov.uk/government/publications/renewable-fuel-statistics-information).

As of the 2022 reports, the biodiesel category now includes biodiesel methyl ester (ME) and off-road biodiesel. These fuels were reported separately in previous years.

Overview

Figure 2: What is a renewable fuel?



The materials renewable fuels are made from are either crops or wastes (e.g. food waste). These are known as **feedstocks**. These are either grown specifically to process into fuel or are waste products such as food waste.

These feedstocks are then processed by renewable fuel manufacturers, producing fuels which behave similarly to conventional propulsion fuel such as petrol and diesel.

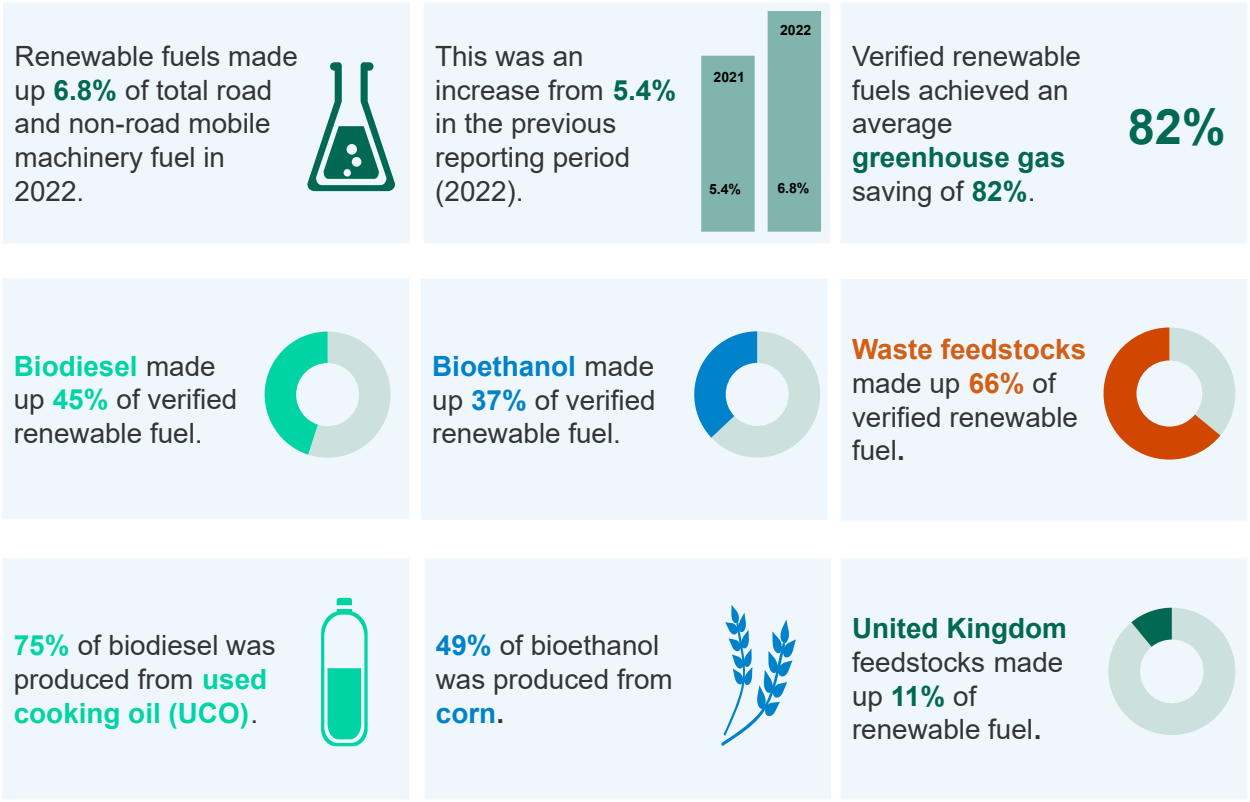
These renewable fuels are then mixed with petrol, diesel and other fuels by fuel suppliers, who are required to have a set proportion of renewable fuels in their fuel stock.

These mixed fuels are then sold at pumps at filling stations and on the market.

Renewable fuels deliver greenhouse gas savings as they are sourced from feedstocks which extract CO_2 from the atmosphere.

Description of Figure 2:
This is a graphical illustration and explanation of what is a renewable fuel, how it is made and how it is used for transport.

Figure 3: Highlights - 2022

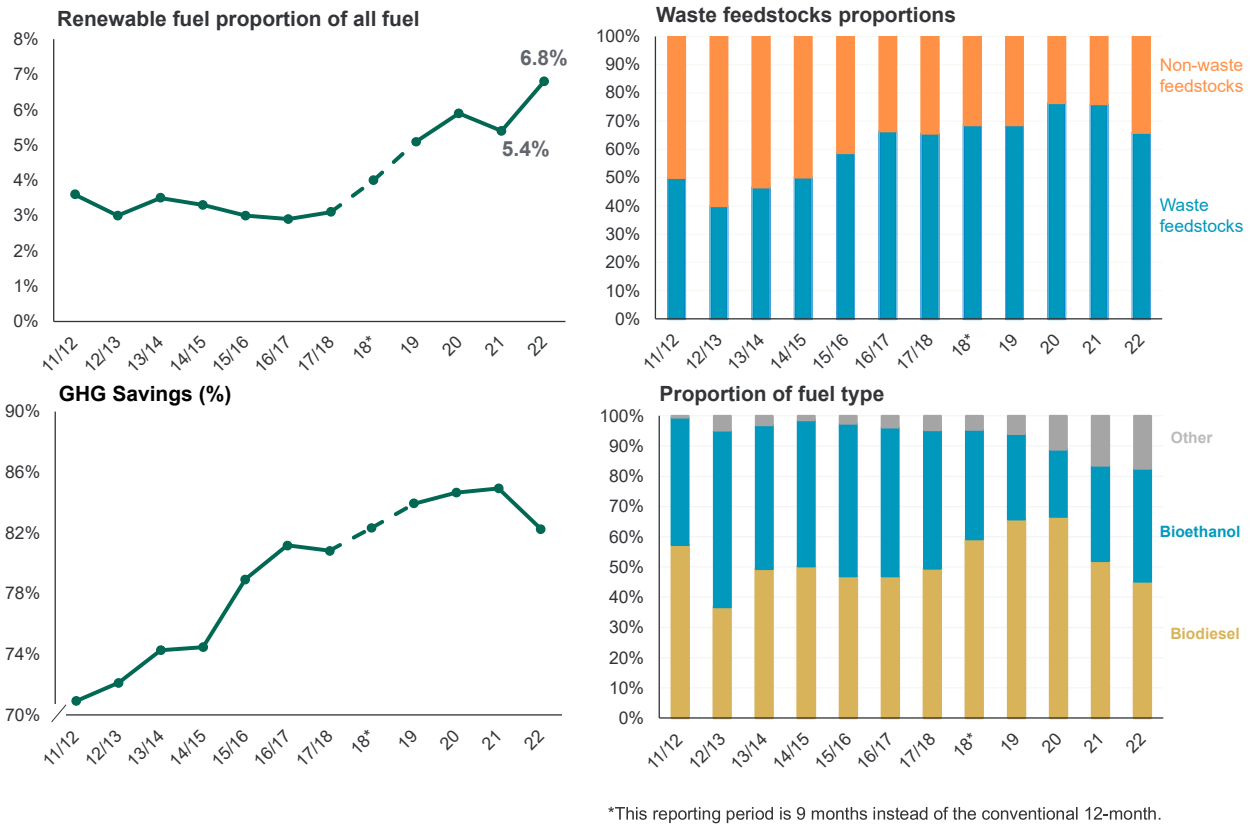


Description of Figure 3:
This is a figure which shows the key statistics of this report, specifically:

- renewable fuel made up 6.8% of total road and non-road mobile machinery in 2022
- this proportion is higher than the previous reporting period (5.4% in 2021)
- verified renewable fuels achieved an average greenhouse gas saving of 82%
- Biodiesel made up 45% of verified renewable fuel
- bioethanol made up 37% of verified renewable fuel
- waste feedstocks made up 66% of verified renewable fuel
- 75% of biodiesel was produced from used cooking oil (UCO)
- 49% of bioethanol was produced from corn
- United Kingdom feedstocks made up 11% of verified renewable fuel

Long-term trends

Figure 4: Long term trends of Renewable fuel



*This reporting period is 9 months instead of the conventional 12-month.

Description of Figure 4:

This is a collection of 4 time series charts, from the financial year ending 2012 to 2022.

The top left chart shows that renewable fuel as a proportion of all fuel remained at around 3% from financial year ending 2012, until financial year ending 2018. In 2022 this proportion was 6.8%, higher than the previous reporting period (5.4% in 2021).

The top right chart shows that the percentage of waste feedstocks for renewable fuel, as opposed to non-waste feedstocks, has steadily increased over time, from 50% at the start of the data series to 66% in 2022. The percentage of waste feedstocks fell between 2021 and 2022, from 76% to 66% respectively. This may be driven by the introduction of E10 in late 2021, a biofuel made up of 90% regular unleaded and 10% ethanol. This fuel led to a shift towards more bioethanol use, which is predominantly made from non-waste feedstocks.

The bottom left chart shows that greenhouse gas (GHG) savings, excluding ILUC, have also increased over time. Initial increases, from 71% in financial year ending 2012 to 81% in financial year ending 2017, have slowed over time. Average greenhouse gas savings in 2022 were 82%, three percentage points lower than in 2021. This decrease can also be explained in part by an increased proportion of bioethanol being supplied after the introduction of E10 in late 2021.

The bottom right chart shows that the proportion of biodiesel has decreased from 57% in financial year ending 2012 to 45% in 2022. In 2020, the proportion of biodiesel dropped, from 67% in 2020, to 52% in 2021, to an even lower value of 45% in 2022. The proportion of bioethanol fell between the financial year ending 2012 to the year 2020, from 42% to 22%. In 2022, after the introduction of E10 fuel, the share of bioethanol grew to 37% of renewable fuel supply, higher than the previous reporting period (32% in 2021). Other types of renewable fuel have been increasing gradually in recent years.

Greenhouse Gas (GHG) savings

Greenhouse Gas (GHG) savings

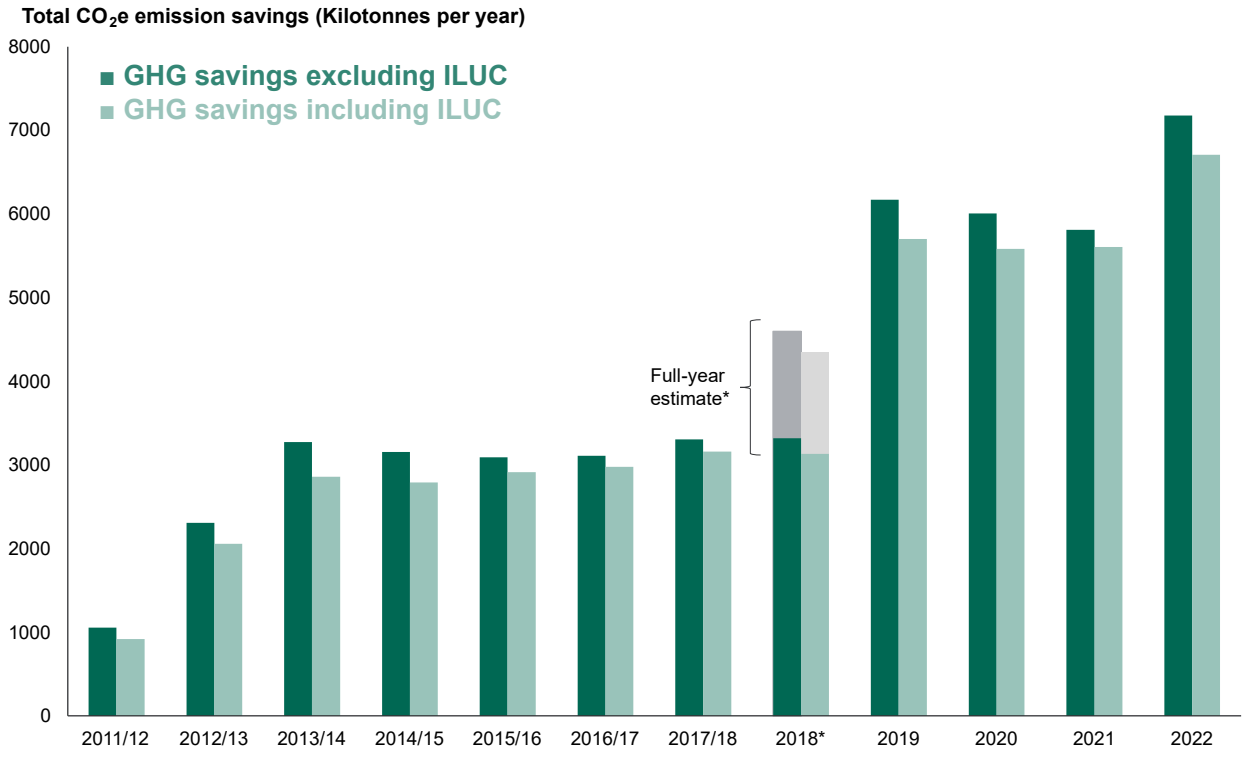
GHG savings represent the difference in GHG emissions between using renewable fuel as opposed to the conventional fuel they replace. The Motor Fuel GHG Emissions Reporting Regulations set obligations for fuel suppliers to reduce their average GHG intensity.

In 2022, an aggregated GHG saving of 82% was achieved when compared to fossil fuels. This amounts to a GHG saving of 7,177 kilotonnes of CO2 (kt CO2) equivalent emissions compared to conventional fuel. This is an increase from 5,810 kt CO2e in 2021, which was in part due to the recovering of trade and shipping during the COVID-19 pandemic. Accounting for indirect land-use change (ILUC), the 2022 GHG saving was 77%.

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.

Figure 5: Greenhouse gas saving delivered by renewable fuel supplied to the UK, financial year ending 2012 to 2022 (table RF 0114 (https://www.gov.uk/government/statistics/renewable-fuel-statistics-2022-final-report))



*This reporting period is 9 months instead of the conventional 12-month. The uplift factor demonstrates the GHG savings that would have been achieved had the same GHG savings been extended over a 12-month period.

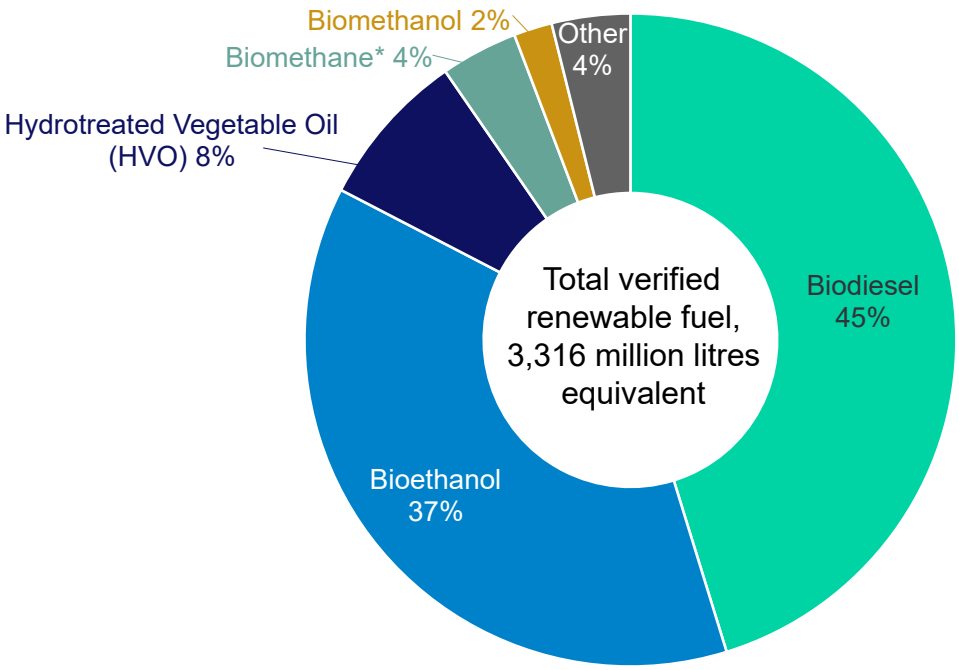
Description of Figure 5:
This is a bar chart which shows the kilotonnes of CO2 equivalent of GHG savings, from financial year ending 2012 to 2022. The amount of kilotonnes of CO2 equivalent of GHG savings, both excluding and including ILUC, has increased by 7 times from the financial year ending 2012 to 2022.

The levels of GHG savings increased constantly from the financial year ending 2012 to the financial year ending 2014, from 1,057 kt CO2e to 3,271 kt CO2e (excluding ILUC), then remained at relatively stable levels at more than 3,000 kt CO2e every year (excluding ILUC) until the financial year ending 2018. In 2019 GHG savings excluding ILUC rose to 6,168 kt CO2e and fell to 5,810 kt CO2e in 2021. In 2022, GHG savings excluding ILUC stand at 7,177 kt CO2e and including ILUC they stand at 6,708 kt CO2e.

Suppliers are required to supply carbon and sustainability data for the renewable fuel they supply to the UK, and this information can be seen in table RF_0110 (https://www.gov.uk/government/statistics/renewable-fuel-statistics-2022-final-report).

Fuel type

Figure 6: Volume of verified renewable fuel by fuel type (table RF 0105a (https://www.gov.uk/government/statistics/renewable-fuel-statistics-2022-final-report))



* Biogases, such as biomethane and biopropane, are reported in kg but are converted to equivalent litres using standard multiplication factors, as laid out in the RTFO.
Figures may not sum due to rounding.

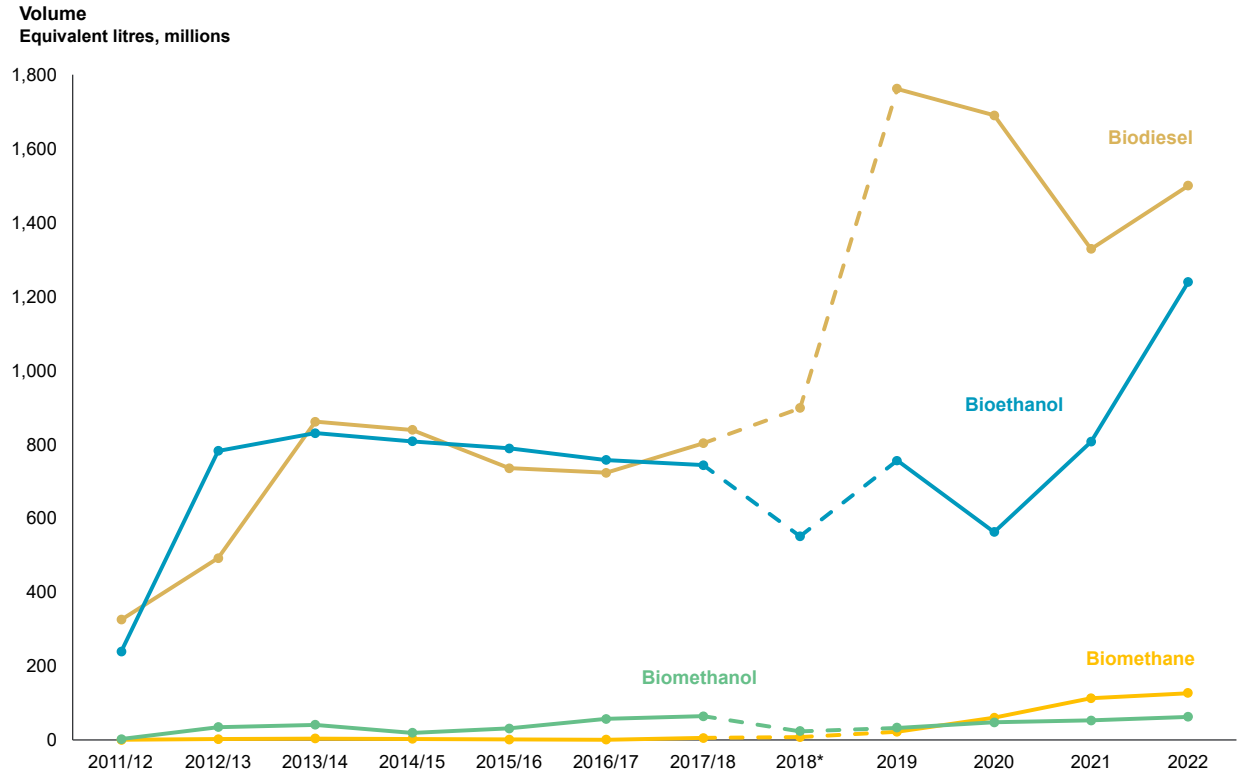
The overall volume of verified renewable fuel supplied to the UK in 2022 (3,316 million litres eq.) was 30% higher than the volume in 2021 (2,558 million litres eq.). 2022 also saw a 1% increase in total fossil fuel supplied, compared to 2021.

Description of Figure 6:
This is a pie chart which represents the proportions of fuel types in 2022. Of the 3,316 million litres eq. of renewable fuel;

- biodiesel made up 45%
- bioethanol made up 37%
- Hydrogenated Vegetable Oil (HVO) made up 8%
- biomethane made up 4%
- biomethanol made up 2%
- avtur (renewable) made up 1%

There were also small volumes of biopetrol and diesel of biological origin.

Figure 7: Supply of selected renewable fuels to the UK by fuel type, financial year ending 2012 to 2022 (table RF 0105b (https://www.gov.uk/government/statistics/renewable-fuel-statistics-2022-final-report))



*This reporting period is 9 months instead of the conventional 12-month.

Description of Figure 7:

This is a line chart showing fuel type trends, from financial year ending 2012 to 2022, specifically of biodiesel, bioethanol, biomethane and biomethanol.

Volumes of bioethanol have increased by 432 million litres eq. from 2021. Volumes of biodiesel (comprising biodiesel ME and off-road biodiesel) have increased by 171 million litres eq. since 2021. The supply of biomethanol increased slightly from 2021.

Since the start of the reporting period, supply of biodiesel has gradually increased. Biodiesel supply saw a steep increase from 326 million litres eq. in financial year ending 2012 to 861 million litres eq. in financial year ending 2014. They then remained at a relatively constant level of under 900 million litres eq. until 2018, and then increased to its highest level since the start of the reporting period, at 1,762 million litres eq. in 2019. In 2022, biodiesel supply stands at 1,500 million litres eq., a rise from the previous reporting period (1,329 million litres eq. in 2021).

Volumes of bioethanol have seen a similar trajectory, rising from 240 million litres eq. in financial year ending 2012 to 1,239 million litres eq. in

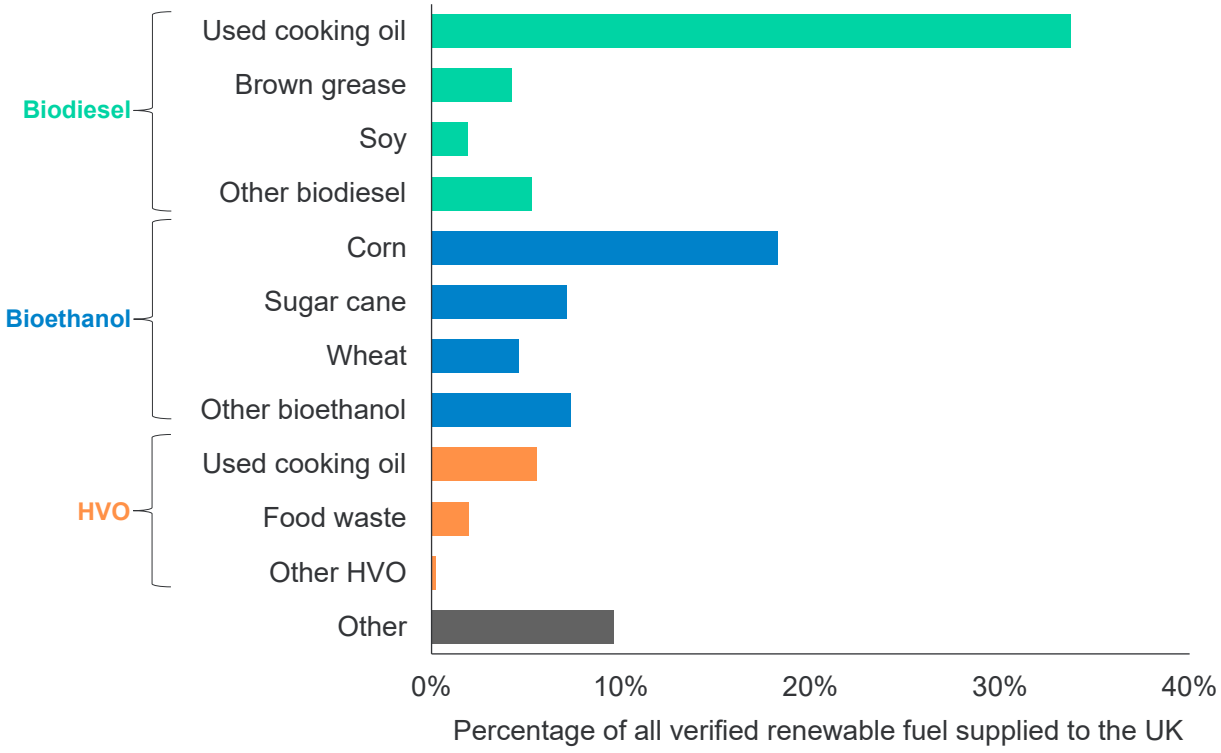
2022. Volumes of biomethane have been increasing since financial year ending 2018, surpassing biomethanol in 2020.

Feedstock

Feedstocks

Any sustainable and renewable resource (biomass or renewable energy source) that can be converted into, or used directly, as a transport fuel or other energy product.

Figure 8: Supply of verified renewable fuel to the UK by feedstock and fuel type (table RF_0105a (https://www.gov.uk/government/statistics/renewable-fuel-statistics-2022-final-report))

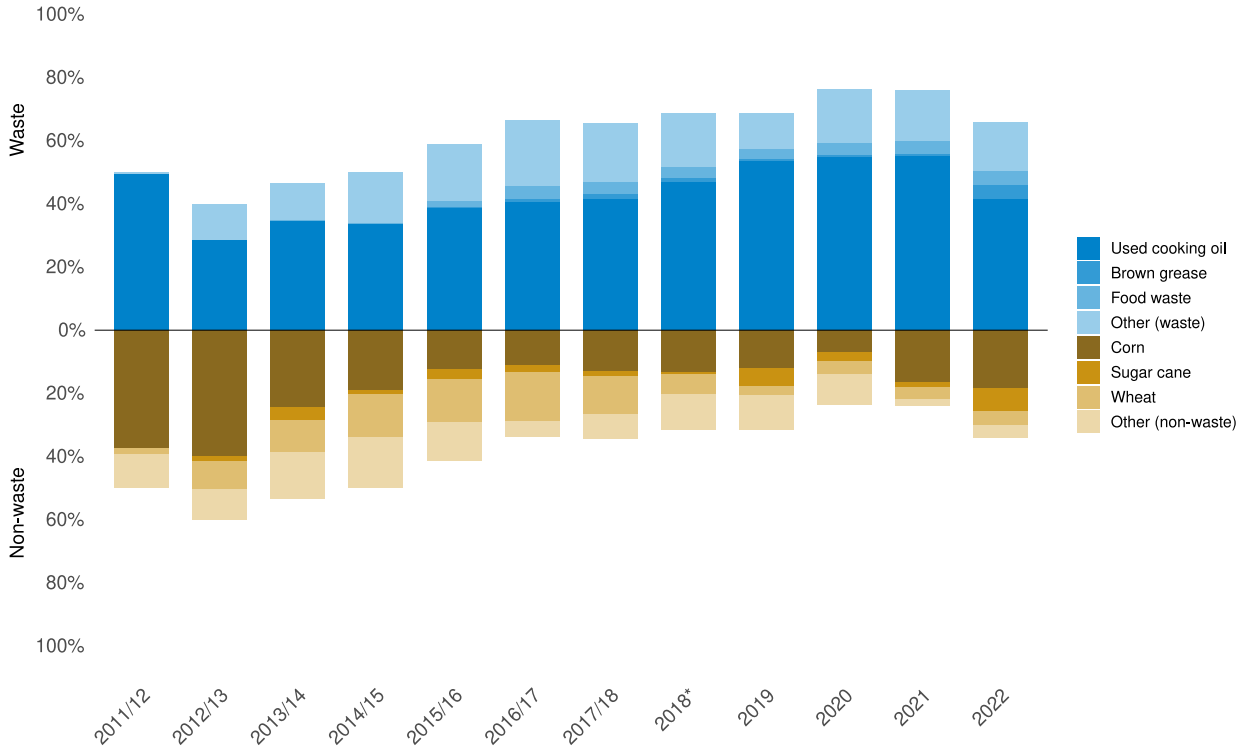


Description of Figure 8:
This is a bar chart showing feedstock proportions in 2022.

A large portion (42%) of all verified renewable fuel was produced from UCO, which is used in several different types of renewable fuel, such as

biodiesel, HVO and renewable aviation fuel. UCO comprised 75% of biodiesel. For bioethanol, the most common feedstock was corn (49%). Corn-based bioethanol comprised 18% of total verified renewable fuel.

Figure 9: Supply of verified renewable fuel to the UK by feedstock, financial year ending 2012 to 2022 (table RF_0105a (https://www.gov.uk/government/statistics/renewable-fuel-statistics-2022-final-report))



*This reporting period is 9 months instead of the conventional 12-month.

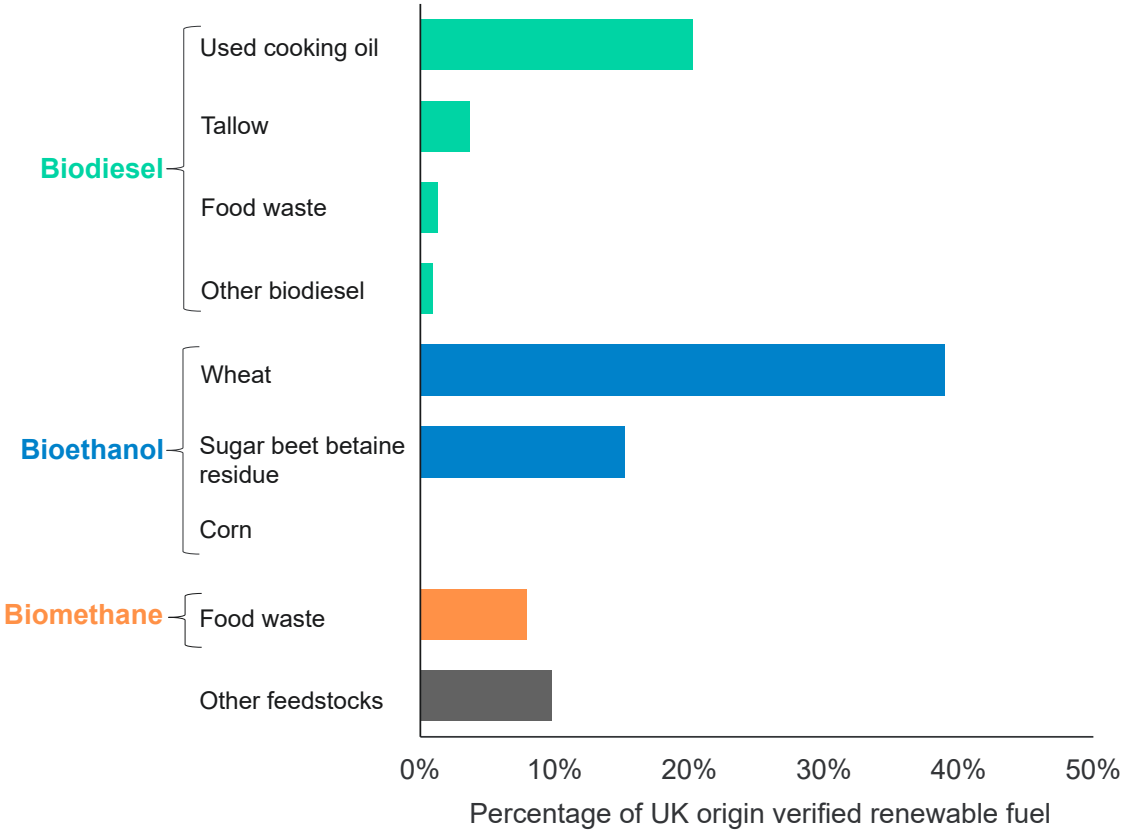
Description of Figure 9:
This is a bar chart which shows proportions of feedstocks, divided by waste and non-waste categories, from financial year ending 2012 to 2022.

The most common waste feedstock has been UCO throughout the entire reporting period. The most common non-waste feedstock has mostly been corn through the reporting period.

UK feedstock

Figure 10: UK origin verified renewable fuel by feedstock (table RF_0105a (https://www.gov.uk/government/statistics/renewable-fuel-

statistics-2022-final-report))

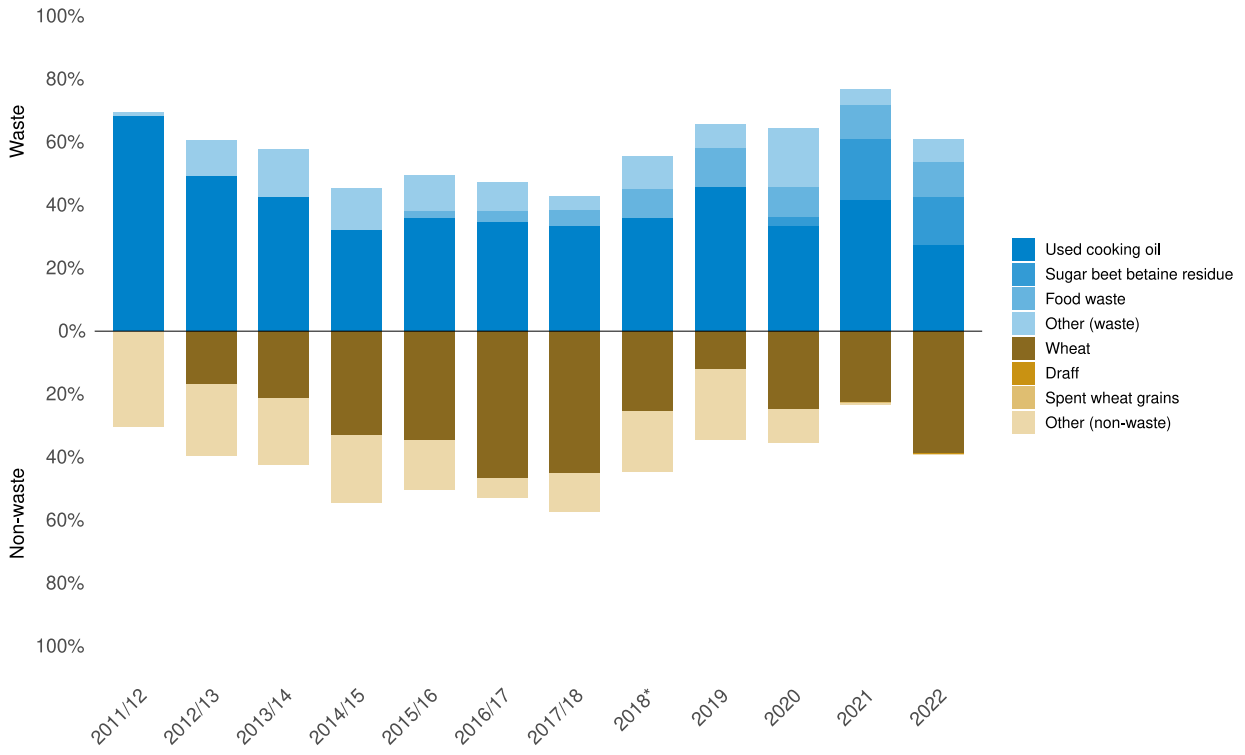


Description of Figure 10:
This is a bar chart which shows the proportions of UK origin feedstocks.

Of the 351 million litres eq. of verified renewable fuel produced from UK-origin feedstock, the most common by feedstock and fuel type combination was bioethanol from wheat (136.7 million litres, 39% of renewable fuel from UK origin feedstock). The most common source of biodiesel from UK origin feedstock was UCO (71 million litres, 20% of renewable fuel from UK origin feedstock).

Renewable fuels from UK feedstocks made up 11% of total renewable fuels in 2022.

Figure 11: UK origin verified renewable fuel by feedstock, financial year ending 2012 to 2022 (table RF_0105a (https://www.gov.uk/government/statistics/renewable-fuel-statistics-2022-final-report))



*This reporting period is 9 months instead of the conventional 12-month.

Description of Figure 11:
This is a bar chart which shows proportions of UK origin feedstocks, divided by waste and non-waste categories, from financial year ending 2012 to 2022. 61% of UK origin renewable fuel was produced from a waste feedstock, down from 77% in 2021.

The most common UK origin waste feedstock has been UCO throughout the entire reporting period. The most common non-waste UK origin feedstock has mostly been wheat through the reporting period.

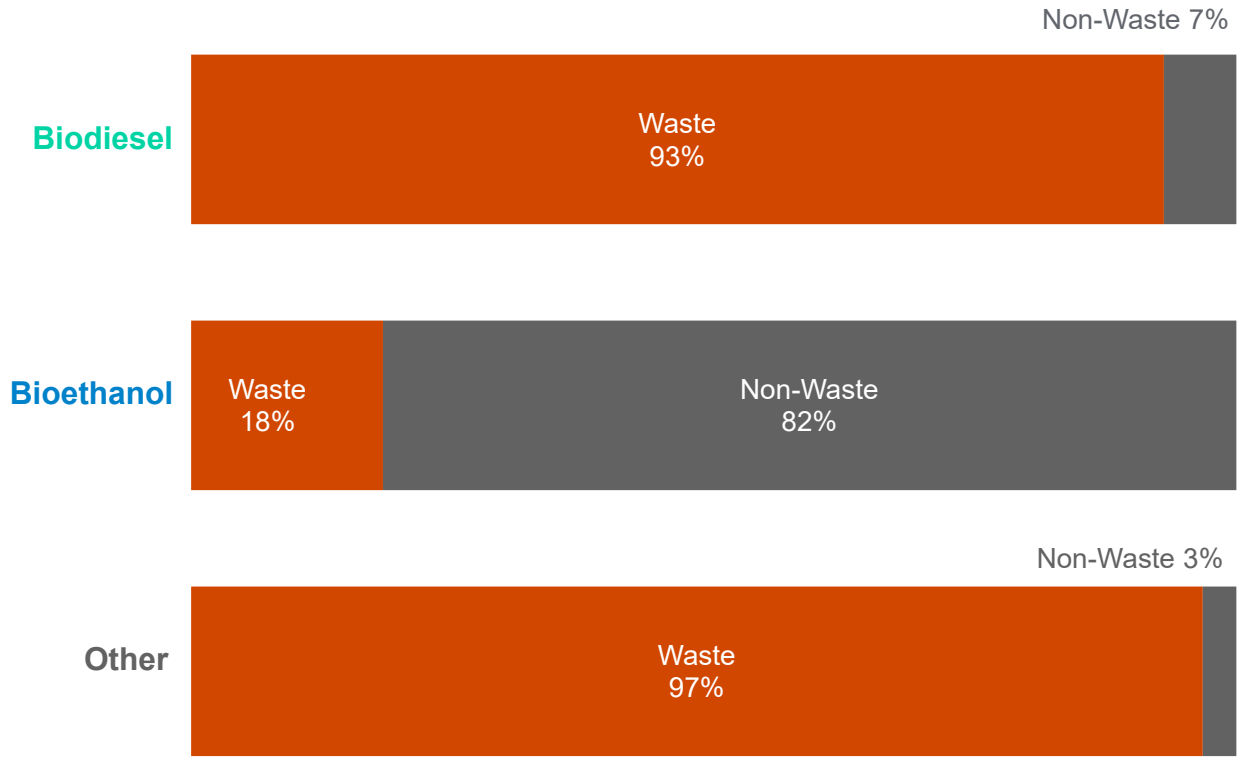
Waste feedstock and origin

Waste feedstocks

Renewable fuel produced from waste feedstocks typically delivers greater greenhouse gas savings than fuel derived from feedstocks produced specifically to be made into renewable fuel. Therefore, these are encouraged under the RTFO and are typically awarded double certificates. For simplicity, both wastes and residues are included as waste feedstocks in this report and include used cooking oil, municipal

organic waste, waste agricultural products such as corn husks, and sewage sludge.

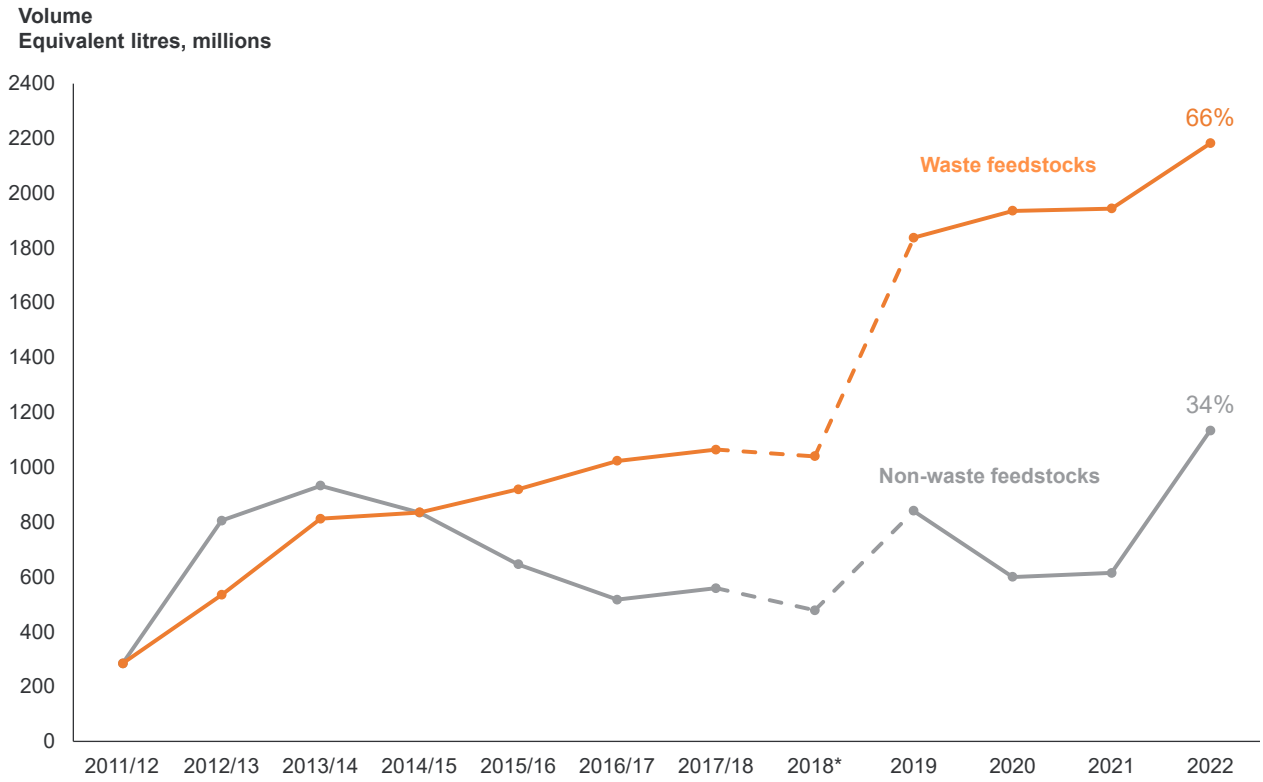
Figure 12: Proportion of waste and non-waste feedstock amongst verified renewable fuel (table RF_0105a (https://www.gov.uk/government/statistics/renewable-fuel-statistics-2022-final-report))



Description of Figure 12:
This is a bar chart showing waste and non-waste proportions of biodiesel, bioethanol and other types of fuel.

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 feedstocks totalled 2,182 million litres eq. in 2022. Waste feedstocks made up 66% of all verified renewable fuel in 2022. Waste feedstocks made more than 90% of biodiesel and other types of fuel in 2022. However, waste feedstocks made up 18% of bioethanol production, 227 million litres eq. This is a decrease from 30% in 2021 (238 million litres eq.).

Figure 13: Renewable fuels from waste and non-waste feedstock, financial year ending 2012 to 2022 (table RF_0105a (https://www.gov.uk/government/statistics/renewable-fuel-statistics-2022-final-report))



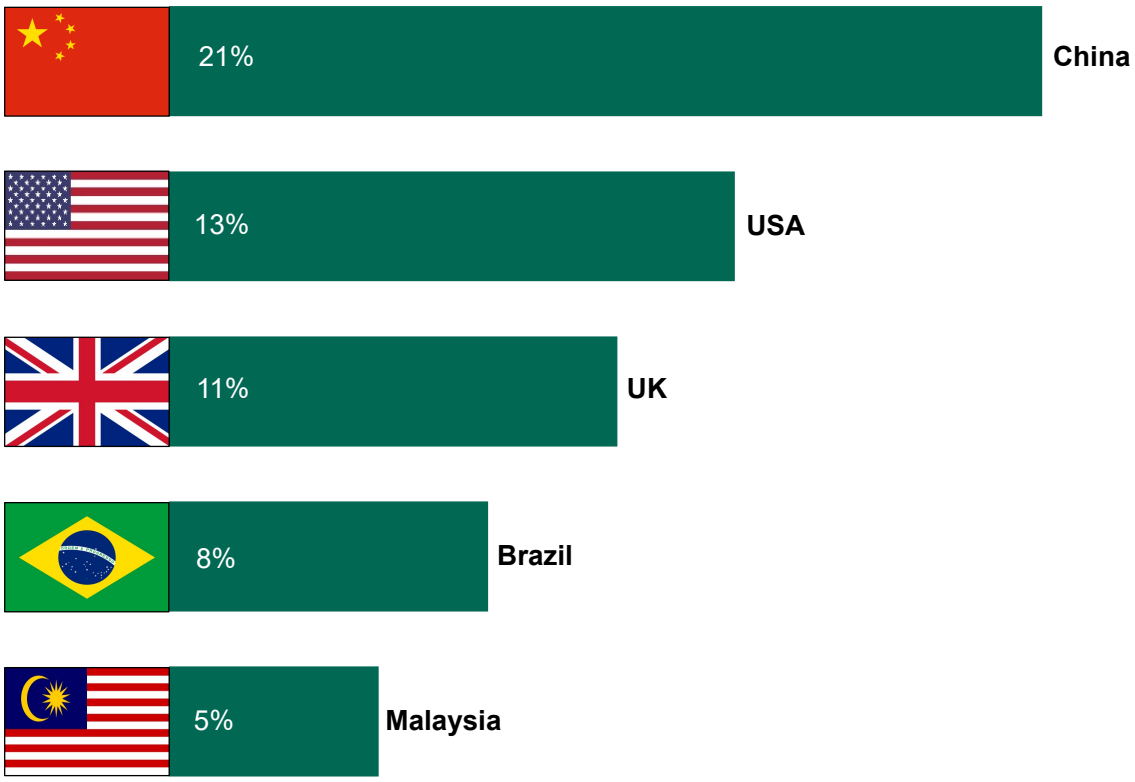
*This reporting period is 9 months instead of the conventional 12-month.

Description of Figure 13:
This is a line chart showing the amount of waste and non-waste litres of renewable fuel, from financial year ending 2012 to 2022.

Waste-derived fuels have been increasing over time. At 66%, the proportion of fuel from waste feedstocks was lower than the previous reporting period (76% in 2021), but the total quantity of waste-based fuels still increased from 1,944 to 2,182 million litres eq. Use of non-waste feedstocks has increased both absolutely and relative to waste feedstocks, and since financial year ending 2015 they have made up the minority of overall renewable fuel supply to the UK.

Country of origin

Figure 14: Top 5 countries of origin for feedstocks which were used in UK renewable fuels in 2022 (table RF_0105a (https://www.gov.uk/government/statistics/renewable-fuel-statistics-2022-final-report))



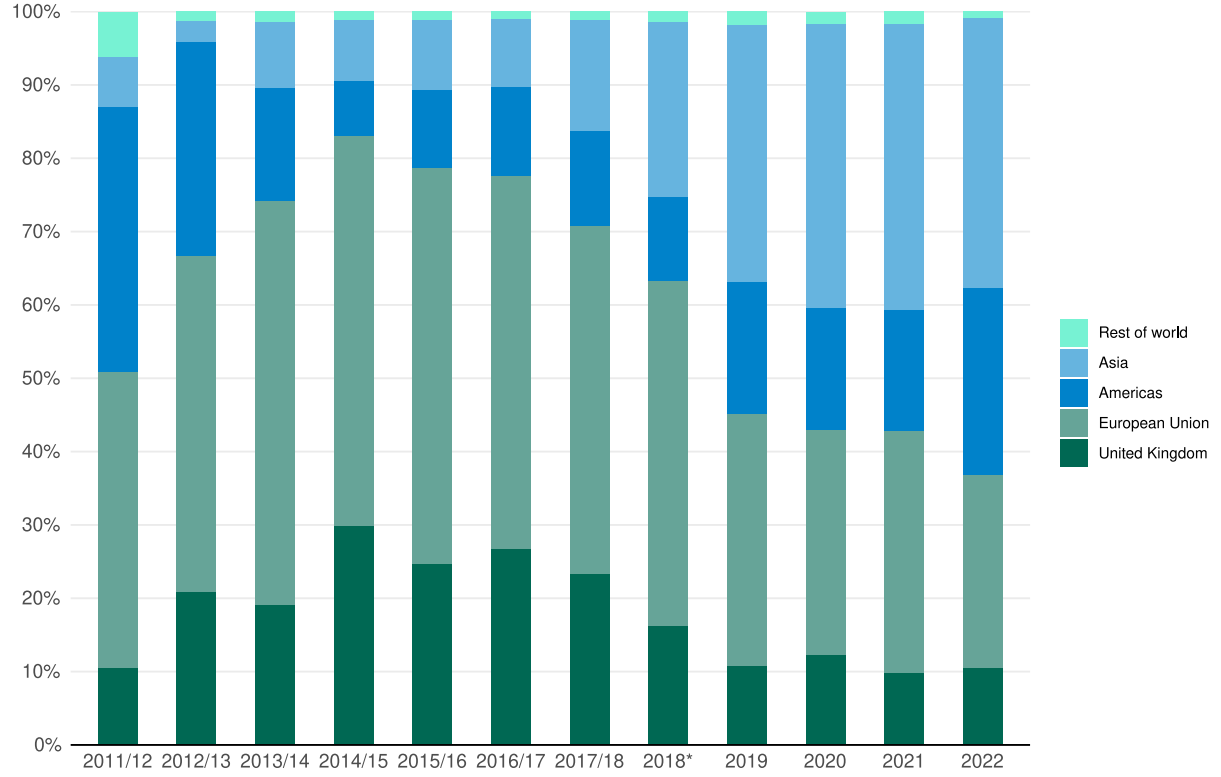
Description of Figure 14:
This is a bar chart which shows the top 5 countries supplying renewable fuel to the UK.

11% of verified renewable fuel supplied to the UK this year was derived from UK feedstocks. The top 5 feedstock origin countries together account for 57% of renewable fuel.

Of the 3,316 million litres eq. of verified renewable fuel supplied in 2022, the most widely reported source for biodiesel supplied for use in the UK (by feedstock and country of origin) was UCO from China (454 million litres, 14% of renewable fuel supplied, 30% of total biodiesel supplied).

The most widely reported source for bioethanol supplied to the UK in 2022 (by feedstock and country of origin) was corn from the United States (338 million litres, 10% of renewable fuel supplied, 27% of total bioethanol supplied), followed by sugar cane from Brazil (228 million litres, 7% of renewable fuel, 18% of total bioethanol supplied).

Figure 15: Proportion of renewable fuel supplied to the UK by region, financial year ending 2012 to 2022 (table RF_0105b (https://www.gov.uk/government/statistics/renewable-fuel-statistics-2022-final-report))



*This reporting period is 9 months instead of the conventional 12-months.

Description of Figure 15:
This is a bar chart which shows the proportions of renewable fuel origin from different parts of the world, from the financial year ending 2012 to 2022. From the start of the reporting period, the proportion of UK-origin renewable fuel has increased at first, but then came back down to 11% in 2022, proportions of renewable fuel from the European Union and the rest of the world (which comprises of Africa and Oceania) have decreased, whilst the proportion of renewable fuel from Asia has increased and the proportion from the Americas has been variable.

The proportion of verified renewable fuel from Asia decreased from 2021, standing at 37% in 2022. The proportion of verified renewable fuel from the UK increased slightly from 10% in 2021 to 11% in 2022, and verified renewable fuel from the Americas increased from 2021, standing at 25% in 2022.

Figure 16: Average greenhouse gas saving by country supplying fuel, 2022 (table RF_0105a (https://www.gov.uk/government/statistics/renewable-fuel-statistics-2022-final-report))

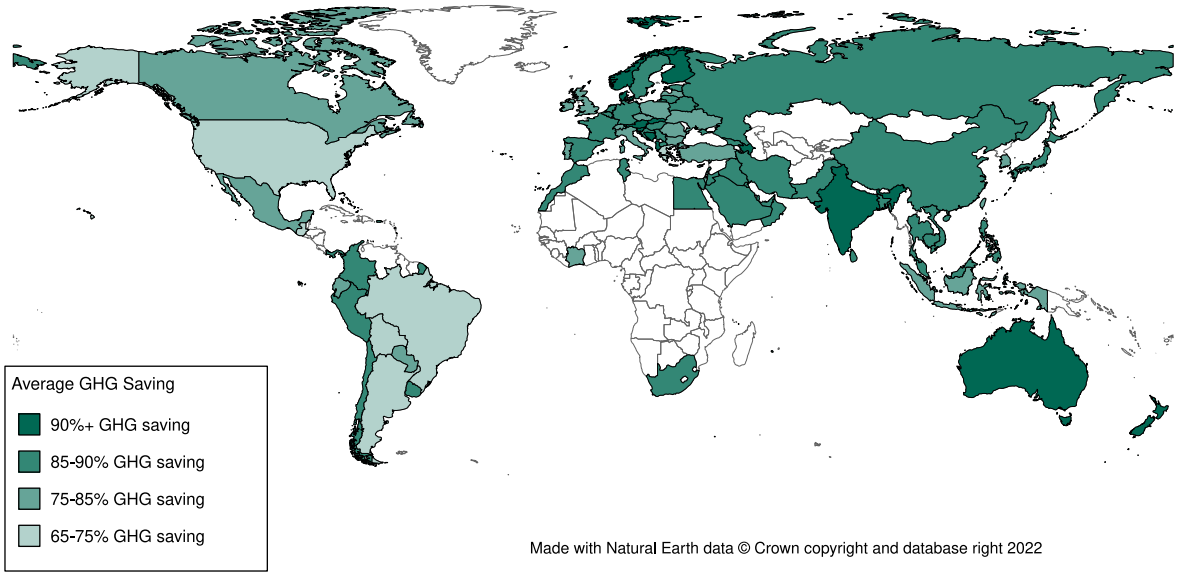


Figure 17: Country of origin of all biodiesel feedstocks, 2022 (table RF_0105a (https://www.gov.uk/government/statistics/renewable-fuel-statistics-2022-final-report))

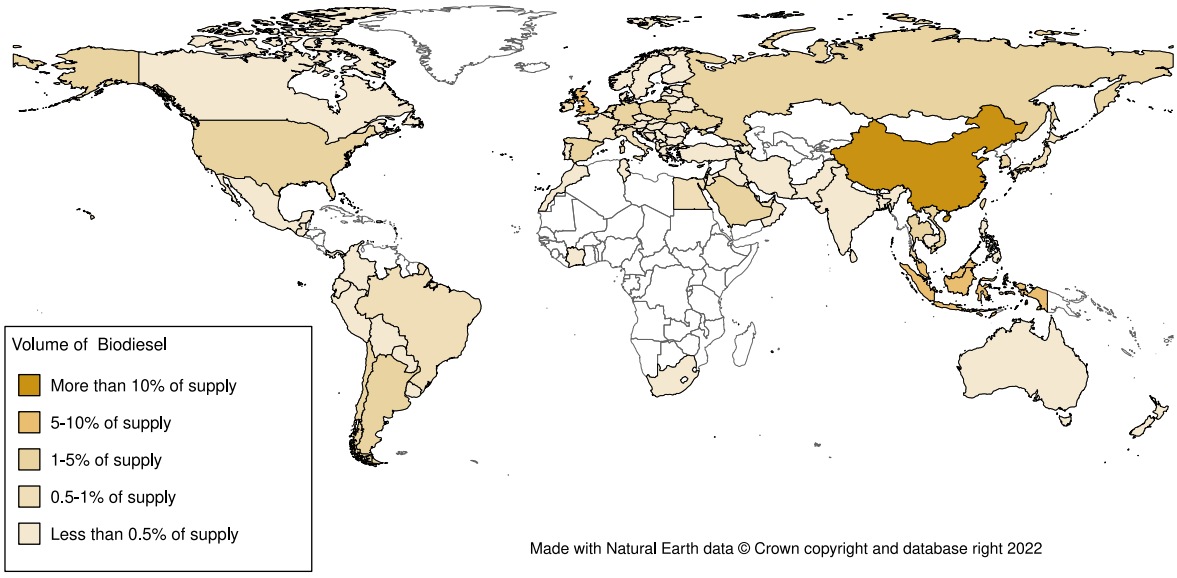
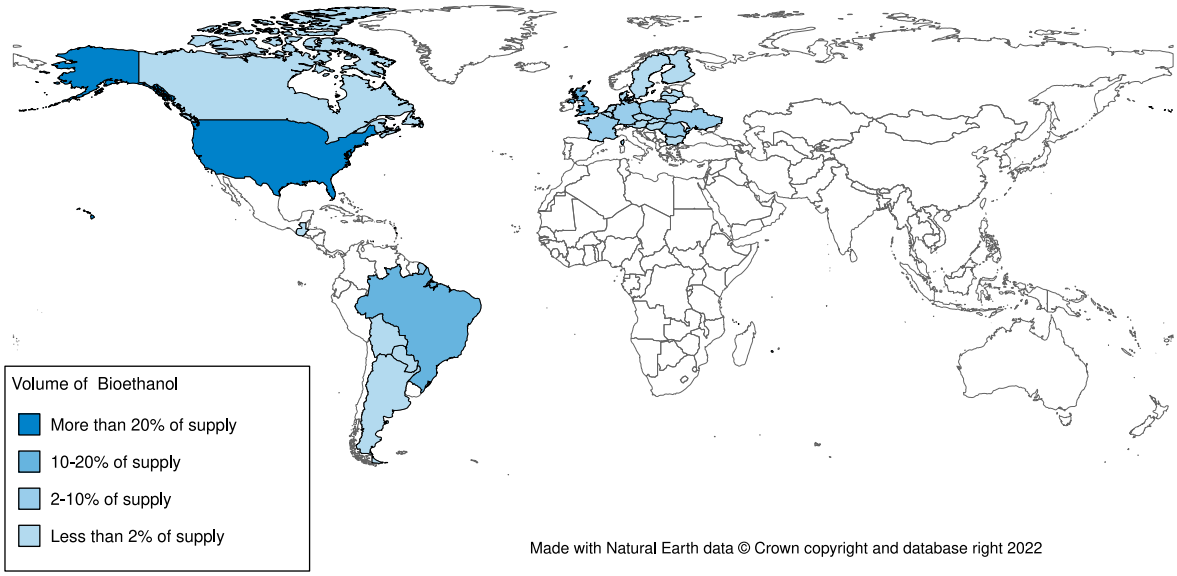


Figure 18: Country of origin of all bioethanol feedstocks, 2022 (table RF_0105a (https://www.gov.uk/government/statistics/renewable-fuel-statistics-2022-final-report))

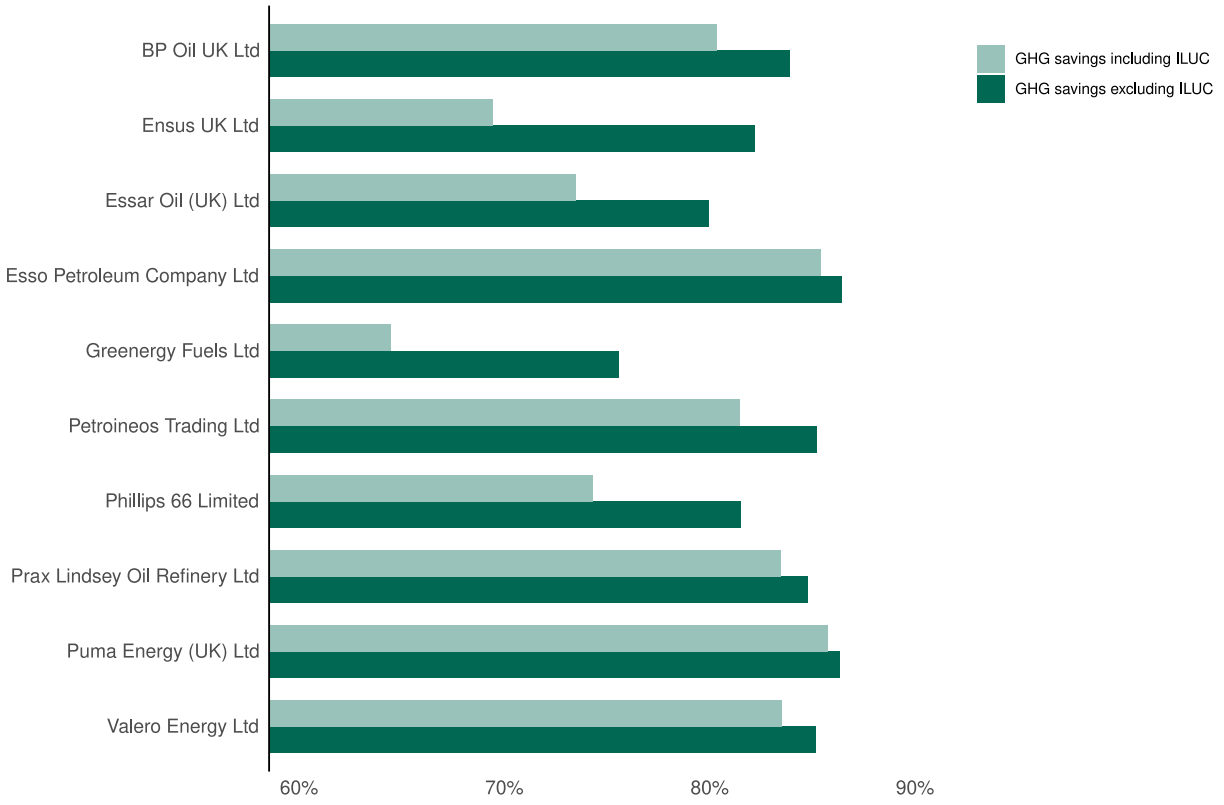


Descriptions of Figures 16, 17 and 18:
Figure 16 is a world map showing average GHG savings by country supplying renewable fuel, in 2022. Figure 17 is a world map showing imports of biodiesel by country in 2022. Figure 18 is a world map showing imports of bioethanol by country in 2022. These maps are made with Natural Earth data © Crown copyright and database right 2022.

Supplier information

The market for renewable fuel was diverse in 2022, with 38 different suppliers supplying renewable fuel to the UK market in this reporting period. This is a decrease on the 44 companies that supplied renewable fuel to the UK in the previous reporting period.

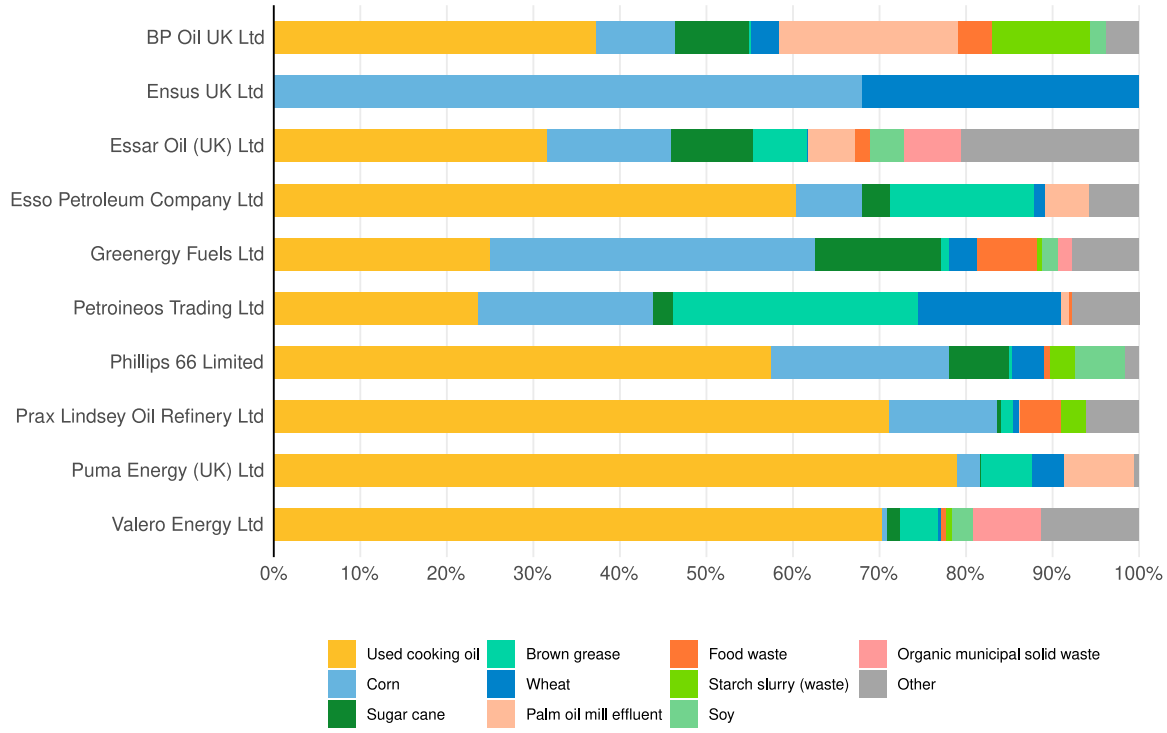
Figure 19: Average GHG savings of top 10 suppliers for 2022, in alphabetical order (table RF_0110 (https://www.gov.uk/government/statistics/renewable-fuel-statistics-2022-final-report))



Description of Figure 19:
This is a bar chart showing average GHG savings of the top 10 suppliers of 2022 (in alphabetical order), distinguished by GHG savings excluding and including ILUC

The top ten suppliers of renewable fuel supplied 86% of the UK supply of renewable fuel in this period. All obligated suppliers met the main obligation, with one supplier achieving this through buying out in some proportion.

Figure 20: Feedstock mix of top 10 suppliers for 2022 (table RF_0110 (https://www.gov.uk/government/statistics/renewable-fuel-statistics-2022-final-report))



Description of Figure 20:
This is a bar chart showing the feedstock mix of the top 10 suppliers of renewable fuel in 2022, in alphabetical order.

Development fuel

Development fuel

Specific fuels made from sustainable wastes or residues (excluding segregated oils and fats such as used cooking oils and tallow) or renewable fuels of non-biological origin (RFNBOs). These fuels are awarded two development fuel certificates per litre eq. of eligible fuel supplied.

A specific target for ‘development fuels’ was introduced from 1 January 2019. This target takes into account the fuel types and the feedstock. Eligible fuels include aviation fuel, drop-in fuels, substitute natural gas and hydrogen (see notes and definitions (https://www.gov.uk/government/publications/renewable-fuel-statistics-information)).

In 2022, the RTFO Administrator has verified 17.9 million litres eq. of development diesel and 10.2 million litres eq. of development petrol, which are renewable fuels and also qualify as development fuels. Together, this fuel was awarded 56.05 million development fuel RTFCs, which is an increase from the 47.94 million development fuel RTFCs awarded in 2021.

All obligated suppliers met their development fuel target, however all suppliers achieved this through buying out at least some amount of their obligation.

87% of development diesel came from organic municipal solid waste from the United States. 81% of development petrol came from organic municipal solid waste, also from the United States, whilst 16% came from end of life tyres from Poland and the remaining 3% came from food waste from Poland and end of life tyres from Sweden.

Certificates awarded under the RTFO

Renewable Transport Fuel Certificates (RTFCs)

RTFCs are awarded to transport fuel suppliers whose renewable fuel meets the sustainability criteria. In 2022, 5,499 million RTFCs have been issued to 3,316 million litres eq. of verified renewable fuel. This is out of a total of 3,325 million litres eq. supplied in 2022.

Double counting feedstock

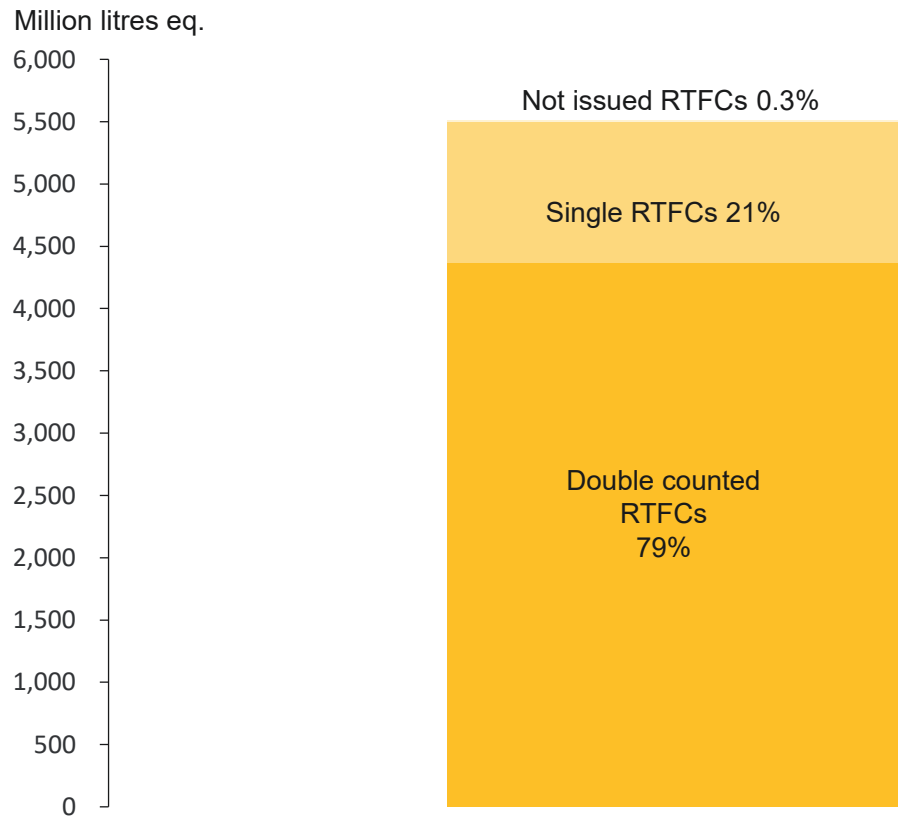
Double counting

Fuel produced from certain wastes or residues, fuel from dedicated energy crops, and renewable fuels of non-biological origin (RFNBOs) are incentivised by awarding double the RTFCs per litre or kilogram supplied. This means that each litre eq. of eligible fuel supplied counts double towards meeting suppliers obligations.

Of the 5,499 million RTFCs awarded to renewable fuel that met the sustainability criteria, 4,364 million were issued to fuel from a ‘Double

Counting' feedstock. A further 9 million litres eq. of renewable fuel went unverified (0.3% of total renewable fuel) and did not receive RTFCs in this period.

Figure 21: Renewable fuel to which RTFCs have been issued (table RF_0102 (https://www.gov.uk/government/statistics/renewable-fuel-statistics-2022-final-report))



Description of Figure 21:
This is a stacked bar chart showing different types of RTFCs issued in 2022.

What is a voluntary scheme?

Voluntary schemes can be used to verify that renewable fuel supplied to the UK complies with the sustainability criteria of the RTFO, which is a prerequisite for RTFCs to be issued.

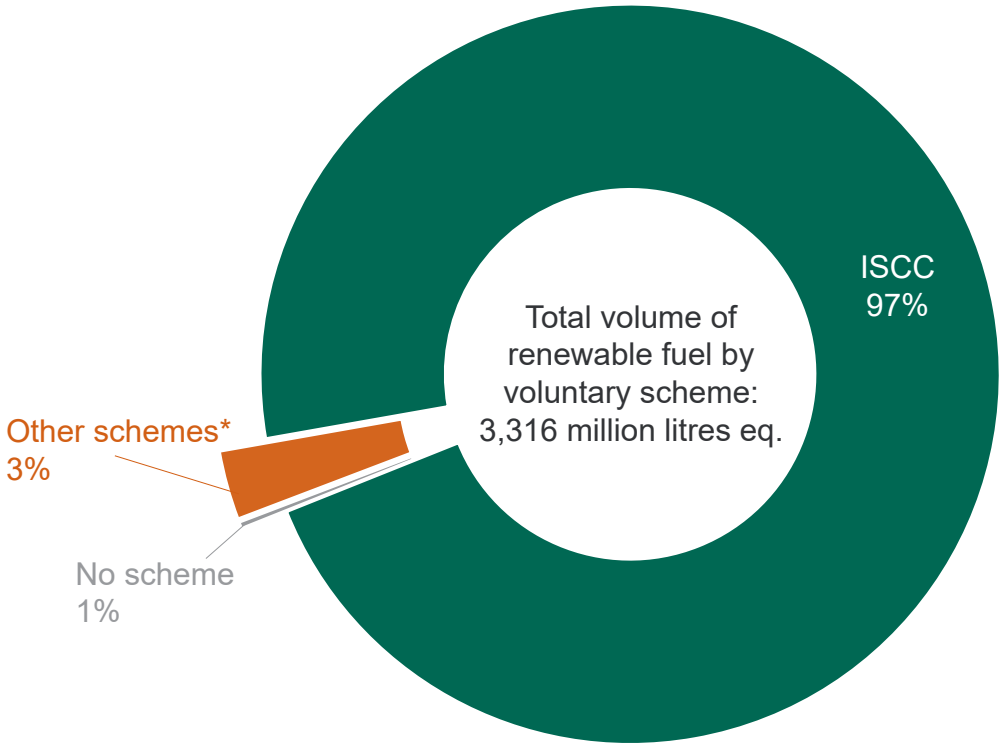
Schemes for certification and traceability

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 97% of all UK renewable fuel in 2022.

The uptake of voluntary schemes has remained above 98% for the past eight years, compared to 20% in the first year of the RTFO.

Figure 22: Proportion of renewable fuel reported via voluntary scheme, 2022 (table RF_0106 (https://www.gov.uk/government/statistics/renewable-fuel-statistics-2022-final-report))



*Other RTFC schemes: RSB, 2BSVS, Redcert EU, NTA 8080, Bonsucro EU.
Figures may not sum due to rounding.

Description of Figure 22:
this is a pie chart showing the different types of RTFC schemes awarded in 2022.

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 HM Revenue and Customs (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 or C&S data available. The final report for an obligation period will show the final position.

Related information

Previously published reports can be found on the DfT website (https://www.gov.uk/government/collections/renewable-fuel-statistics). The publication timetable can be found at Annex B.

Changes to methodology

In 2021, there was a methodological change to the calculation of greenhouse gas savings and carbon intensity. The previous methodology used a simple average across fuel types to estimate the average carbon intensity, and therefore the greenhouse gas saving. The new methodology weights this average by fuel quantity, improving the accuracy of the estimate. As a consequence of this change, previous estimates of greenhouse gas savings for the 2008 to 2021 period were revised, with the percentage change between the two methodologies highlighted in Table 1.

Table 1: Percentage change in estimates of average GHG savings and carbon intensity using new methodology

Reporting period	Difference excluding ILUC	Difference including ILUC
2012 to 2013	0.07%	-1.44%

Reporting period	Difference excluding ILUC	Difference including ILUC
2013 to 2014	-0.15%	-1.19%
2014 to 2015	2.46%	-0.98%
2015 to 2016	-0.13%	-0.75%
2016 to 2017	3.27%	-0.05%
2017 to 2018	-0.04%	-0.59%
2018 (April to December)	-0.02%	0.09%
2018	-0.01%	0.09%
2019	-0.15%	-0.03%
2020	-0.14%	-0.06%

Renewable fuel mix reporting

The data reported by fuel suppliers under the RTFO is in line with mass balance rules. 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 amount of 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.

Obligations Under the RTFO

Verified renewable fuel

Verified renewable fuel refers to fuel that has received RTFCs for having met the Sustainability Criteria. For more, see the notes and definitions (https://www.gov.uk/government/publications/renewable-fuel-statistics-information).

Sustainability criteria

To receive Renewable Fuel Certificates, fuels supplied must meet the sustainability criteria set out in the amended Renewable Transport Fuel Obligations Order 2007 (https://www.gov.uk/government/publications/renewable-transport-fuel-obligation-rtfo-guidance-2021) and the RTFO Compliance Guidance (https://www.gov.uk/government/publications/renewable-transport-fuel-obligation-rtfo-compliance-reporting-and-verification). Renewable fuel must deliver minimum GHG savings and must not originate from land with high biodiversity value or carbon stock unless stringent criteria are met.

Suppliers of fuel for road and non-road mobile machinery (for example, tractors) that supply 450,000 litres equivalent or more per year have an obligation under the RTFO Order. 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. RTFCs are gained by supplying sustainable renewable fuels. In 2022, such suppliers must redeem RTFCs and development fuel RTFCs (dRFTCs) equivalent to 12.6% and 0.9%, respectively, of the volume of fossil and unsustainable renewable fuel supplied.

One certificate may be claimed for every litre or equivalent (notes and definitions) (https://www.gov.uk/government/publications/renewable-fuel-statistics-information) of sustainable renewable fuel supplied. Fuel produced from certain wastes or residues, fuel from dedicated energy crops, and renewable fuels of non-biological origin (RFNBOs) are incentivised by awarding double the RTFCs per litre or kilogram supplied.

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 the 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 HMRCs Hydrocarbon Oils bulletin. For further information see the notes and definitions (https://www.gov.uk/government/publications/renewable-fuel-statistics-information).

Further details

Further information on the data can be found in the notes and definitions (https://www.gov.uk/government/publications/renewable-fuel-statistics-information).

Official statistics

These statistical releases are badged as official statistics. Official statistics are produced to high professional standards set out in the Code of Practice for Statistics. However, these statistics have not been assessed by the Office for Statistics Regulation (OSR). Further details on official statistics can be found in the OSR official statistics page (https://osr.statisticsauthority.gov.uk/policies/official-and-national-statistics-policies/official-statistics-policy/).

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 (https://www.gov.uk/government/publications/renewable-fuel-statistics-pre-release-access).

Annex A: Renewable fuel statistics content of tables

Data tables are published quarterly. Reports are published annually

This is the fifth and final report of 2022, of five in total. This reporting period (2022) was the last one with quarterly reports. After the 4th quarterly report of 2022 (https://www.gov.uk/government/statistics/renewable-fuel-statistics-2022-fourth-provisional-report), we stopped publishing quarterly reports and started publishing data tables quarterly and reports annually. The final report for 2023 is scheduled for release in November 2024, and will report on the carbon and sustainability performance of individual suppliers. All reports are made available online (https://www.gov.uk/government/collections/renewable-fuel-statistics).

Table 2: Typical content of renewable fuel statistics tables

Table	Previously reported as	Description	Provisional Report	Final Report
RF0101	RTFO01	Volume of fuel supplied	Yes	Yes
RF0102	RTFO02	Fuels issued with RTFCs and number of RTFCs issued	Yes	Yes
RF0103	RTFO03	RTFC balance by obligation period	Yes	Yes
RF0104	RTFO04	RTFC trades to date by company type	Yes	Yes
RF0105a	RTFO05	RTFO wide carbon and sustainability data	Yes	Yes
RF0105b	-	Feedstock and country of origin over time	No	Yes
RF0106	RTFO06	RTFO wide voluntary scheme data	Yes	Yes
RF0107	RTFO07	Performance against obligation by supplier	No	Yes
RF0108a	RTFO08a	Feedstock by supplier as a % of their supply	No	Yes
RF0108b	RTFO08b	Country of origin by supplier as a % of their supply	No	Yes
RF0109	RTFO09	% of renewable fuel that was sustainable by supplier	No	Yes
RF0110	RTFO10	Carbon and sustainability data by	No	Yes

Table	Previously reported as	Description	Provisional Report	Final Report
		supplier		
RF0111	RTFO11	RTFO wide fuel supply by volume and energy	No	Yes
RF0112	RTFO12	Civil penalties and other non-compliance	No	Yes
RF0114	-	Total greenhouse gas savings over time	No	Yes

Annex B: Renewable fuel statistics reporting timescales

Table 3: Publication dates and contents of each report

	2021 statistics	2022 statistics	2023 statistics
November 2022	Final Report	Second Provisional Report	
February 2023		Third Provisional Report	
May 2023		Fourth Provisional Report	
August 2023		Fifth Provisional Release (tables only)	First Provisional Release (tables only)
November 2023		Final Report	Second Provisional Release (tables only)

Highlighted reports indicate summary report for the period.

Description of Annex B:
this is a table showing the schedule of the renewable fuel reports in 2021, 2022 and 2023.

Instructions for printing and saving

Depending on which browser you use and the type of device you use (such as a mobile or laptop) these instructions may vary.

How to search

Select Ctrl and F on a Windows laptop or a Command and F on a Mac

This will open a search box in the top right-hand corner of the page. Type the word you are looking for in the search bar and press enter.

Your browser will highlight the word, usually in yellow, wherever it appears on the page. Press enter to move to the next place it appears.

Contact details

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To hear more about DfT statistical publications as they are released, follow us on X (formerly known as Twitter) at DfTstats (https://twitter.com/DfTstats).