Renewable Fuels Agency

RFA monthly report - April/May 2008

1. Introduction

To encourage suppliers to source sustainable biofuels, the RFA requires fuel suppliers claiming Renewable Transport Fuel Certificates to submit monthly reports on the lifecycle greenhouse gas saving and the sustainability of the biofuels they supply.
We have published reporting guidance and developed a sustainability 'meta standard' to help suppliers distinguish between the best and worst kind of biofuels. Existing feedstock standards, such as the Roundtable on Sustainable Palm Oil (RSPO), can be used to report. However, the range of standards available at present is limited, and none meet all of the criteria of the full RTFO meta-standard. It is intended that creating demand for sustainable feedstocks, will lead to further and better standards being developed.

Reporting is also seen by the Government as an essential 'stepping stone' towards a mandatory assurance scheme.

This Monthly Report provides information on the carbon and sustainability performance of renewable fuels supplied under the RTFO. The data is derived from the monthly reports on biofuels provided monthly by individual fuel suppliers. At the end of the reporting year fuel suppliers are required to provide an independent auditor's opinion on their information, and this verified information will be available in the RFA's annual report.

The carbon and sustainability data covers the *direct* impacts arising from biofuel cultivation that are potentially within the influence of companies sourcing or producing biofuels though effective supply chain management. The RFA will separately monitor the potential *indirect* impacts of biofuel production such as indirect land-use change or changes to food and other commodity prices that are beyond the control of individual suppliers (e.g. *The Gallagher Review of the indirect effects of biofuels production* which was published on 8 July 2008).

2. Content of this Monthly Report

The information in this Monthly Report includes:

- volumes of fuel by fuel type (e.g. biodiesel, bioethanol);
- volumes of fuel by source country (e.g. UK, Brazil);
- volumes of fuel by feedstock (e.g. used cooking oil, soy);
- volumes of fuel meeting sustainability standards;
- lifecycle greenhouse gas savings of fuels.

The information is provided in three sets of Excel sheets:

1-7 (Graphs)
Illustrates key data graphically and includes: volumes and proportions of fuel by fuel type, feedstock, and country of origin; data on the sustainability of the biofuels supplied; and percentage data capture for each category. The data is presented in both pie chart and bar chart formats.

Summary data
Provides four tables with summaries of all the road transport biofuel supplied to the UK for each fuel type, country of origin, feedstock, and previous land-use.

Detailed data

Table 5 provides more detailed data broken down by fuel type, feedstock, country of origin and previous land-use. So, for example, data is provided on the volumes of fuel and the C&S data of biodiesel obtained from oilseed rape grown in the UK on cropland, or bioethanol from Brazilian sugar cane, on cropland, and also meeting a Qualifying Standard.

This data is based on information submitted monthly to the RFA by fuel suppliers, but the final audit of this data occurs annually (by 28 September each year in respect of the previous financial year's data). Revisions to the data may occur at any point up until that time. The RFA will publish a comprehensive end of year dataset using data that has been independently verified by 31 January 2010.

Each Monthly Report released by the RFA will contain one month's data on biofuels entering the UK market for those companies that are registered with the RFA. However, the exact timing of the month the data covers is different for major and minor fuel suppliers, due to the way they report data on volumes of fuel to HM Revenue and Customs (HMRC):

- Large fuel companies (typically predominately fossil fuel suppliers) report to HMRC on a 15th to 14th of the month basis.
- Smaller fuel companies (typically biofuel suppliers) report by calendar month or quarter.

This is reflected in RFA reporting as follows:

Each Monthly Report contains:

- data reported by the major fuel suppliers, which report to HMRC on a 15th-14th of the month basis.
- data from the smaller fuel suppliers (typically biofuel suppliers) that report to HMRC on a calendar month basis.

Each Quarterly Report contains:

- All of the above data, plus data from suppliers of relatively low volumes of road transport fuels (typically smaller biofuel suppliers) that report to HMRC on a quarterly basis.

Therefore, this first Monthly Report contains data from 15 Apr - 14 May 2008 for large fuel companies, and 15–30 Apr 2008 for those smaller companies that report by calendar month. For this first Monthly Report only, the reporting month for smaller fuel companies has been truncated and excludes data from 1 - 14 Apr 2008 as the RTFO only came into force on 15 Apr 2008.

3. C&S reporting targets

The Government has set targets for three key aspects of the reporting scheme. The targets are not mandatory (and there is no penalty for failing to meet them), but illustrate the level of performance which the Government expects from fuel suppliers. The Government has said that the targets will be subject to review in the light of suppliers' performance and other developments.

Annual Supplier Target	*2008-09*	*2009-10*	*2010-11*
Percentage of feedstock meeting a Qualifying Environmental Standard	30%	50%	80%
Annual GHG saving of fuel supplied	40%	45%	50%
Data reporting of renewable fuel characteristics	50%	70%	90%

The RFA expects, and Government targets recognise, the need for continuous improvement so that by 2010 comprehensive sustainability data is provided for almost all biofuels supplied to the UK. The RFA nevertheless expects companies to report to the best of their abilities from the start of the scheme.

Executive Summary

This is the Renewable Fuels Agency's (RFA) first monthly report on the supply of biofuels under the Renewable Transport Fuel Obligation (RTFO), covering the period 15 April – 14 May 2008*.

Biofuels accounted for 2.14% of UK road fuel. More biodiesel (86%) has been supplied than bioethanol (14%).

The market has been dominated by imports. The feedstock is known for nearly 90% of biofuels, while both feedstock and country of origin are known for 57%. The most widely reported feedstock was American soy (22%), for biodiesel and Brazilian sugarcane (79%) for bioethanol.

In the first month, 19% of biofuels met environmental standards, compared to a target for the year of 30%.

Greenhouse gas savings of 42% were achieved, but this figure excludes the emissions from indirect changes in land-use considered in the recent ‘Gallagher Review’. The Agency has recommended that indirect effects are included in future sustainability reporting and is working with the Government to identify a way to do this.

The RFA is pleased to be able to make this first set of data available. We will continue to publish information as soon as we are able, and will be reporting company performance figures in our October quarterly report.

The data comes from monthly reports submitted by fuel suppliers to the RFA. The RFA performs checks on the data, which is also subject to an annual verification process by auditors. The RFA will publish a final, fully verified dataset at the end of year.

*The data for companies reporting to HMRC using the calendar month based HO930 form (typically larger biofuel only companies) covers only the second half of April (after the obligation came into effect), 15 April – 30 April 2008.

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Glossary

Obligated company

- An obligated company is one that supplies > 450 000 litres/ year of hydrocarbon oil road transport fuel.
- Obligated suppliers must either:
    - supply biofuels; or
    - pay into a buy-out fund; or
    - purchase certificates from other companies supplying biofuels; or
    - a combination of any of the above.

Sustainability standards

- Sustainability assurance schemes are divided into Environmental and Social Standards and these are split into 3 levels:

1. RTFO sustainable biofuel meta-standard (RTFO) - this is a higher standard than most existing sustainability standards and covers 7 key environmental and social principles.
2. Qualifying Standards (QS) - meet the majority of the environmental and/or social criteria defined under the RTFO meta-standard.
3. Benchmarked Standards - these have been benchmarked against the RTFO meta-standard but do not meet sufficient criteria to be awarded QS status.
4. None/unknown - for where the feedstock was not certified against a standard, or the data is unavailable.

- Suppliers can report a Benchmarked or Qualifying Standard and conduct supplementary audits to meet a QS or the RTFO meta-Standard, respectively.

- Suppliers producing biofuels from by-products have no or little control over how the source feedstocks were produced. Therefore, in recognition of the use of a waste for these biofuels they are automatically awarded a QS.

Previous land-use

- This is the use of the land on which the feedstock crop was grown prior to 30 Nov 2005. There are 5 categories:
1. unknown
2. cropland
3. grassland - agricultural use
4. grassland - non-agricultural use
5. forestland

- By-products e.g. used cooking oil, tallow, do not require any additional land as these are waste products from other processes.
- The previous land-use affects greenhouse gas emissions due to release of carbon stored in the soil and plants when the land is cleared and ploughed up for biofuel crops.

Carbon Intensity

- Carbon intensity is a measure of the greenhouse gas (GHG) emissions of the fuel chain from 'well-to-wheel'.
- Different GHGs have different potencies (some have a greater contribution to global warming than others).
- To account for this, all GHGs are expressed in terms of their strength relative to carbon dioxide (CO_{2e}).

Greenhouse gas emissions

- Greenhouse gas (GHG) emissions of different biofuels can vary significantly depending on the system of cultivation, processing, and transportation of feedstock.
- The data collected takes into account GHG emissions of the fuel chain from the farm to the forecourt incorporating data on feedstock, country of origin and land-use change.
- GHG saving refers to the amount of GHGs that have not been emitted to the atmosphere due to replacing petrol and diesel with bioethanol and biodiesel, respectively.

Accuracy level

- Accuracy level is a measure of the amount of data provided by the supplier on a particular batch of biofuels.
- This data is used for calculation of the greenhouse gas emissions of the fuel chain.
- It ranges from 0 to 5 where 5 is the highest:-

0 - unknown feedstock or country of origin
1 - known feedstock or country of origin
2 - known feedstock AND country of origin
3 - data input based on RFA-defined defaults
4 - data input based on industry-defined defaults
5 - 'real' data input to the fuel chain e.g. information on fertiliser inputs and crop yield of the source feedstock.

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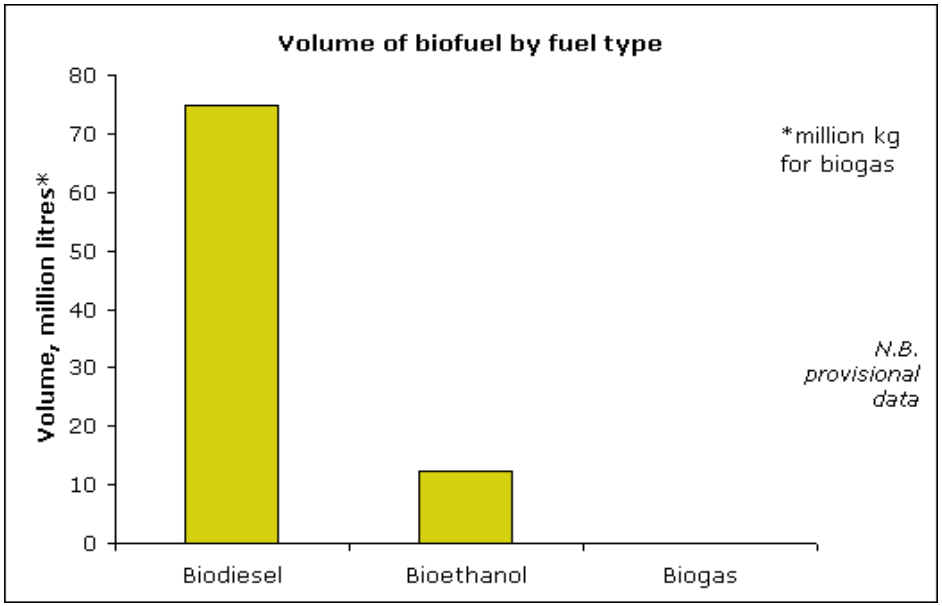
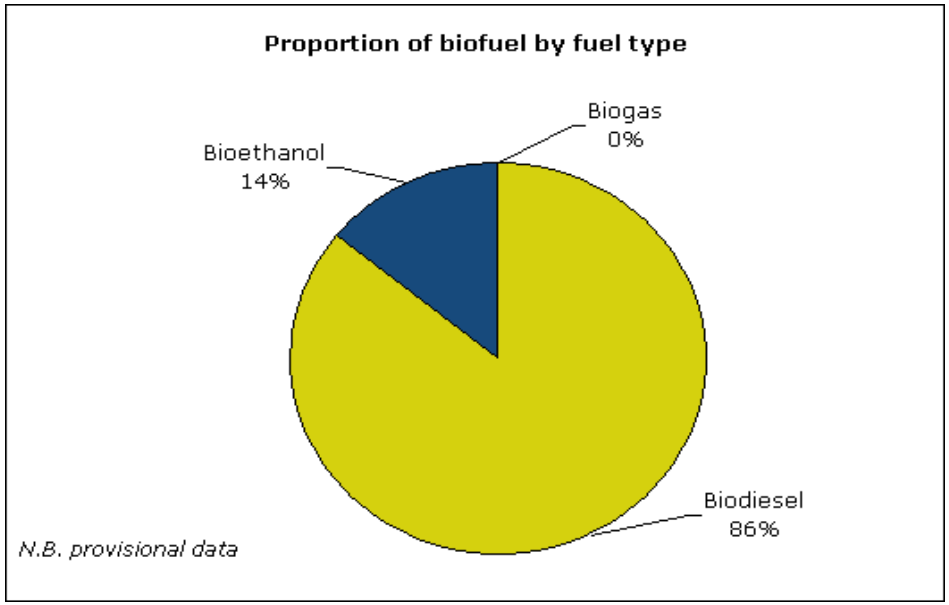
Volumes and proportions by fuel type





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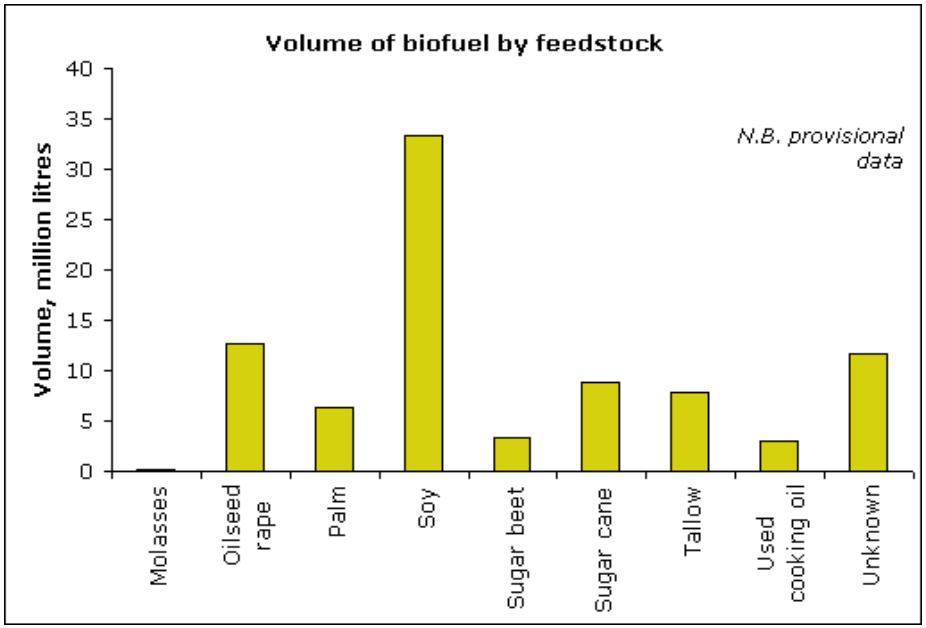
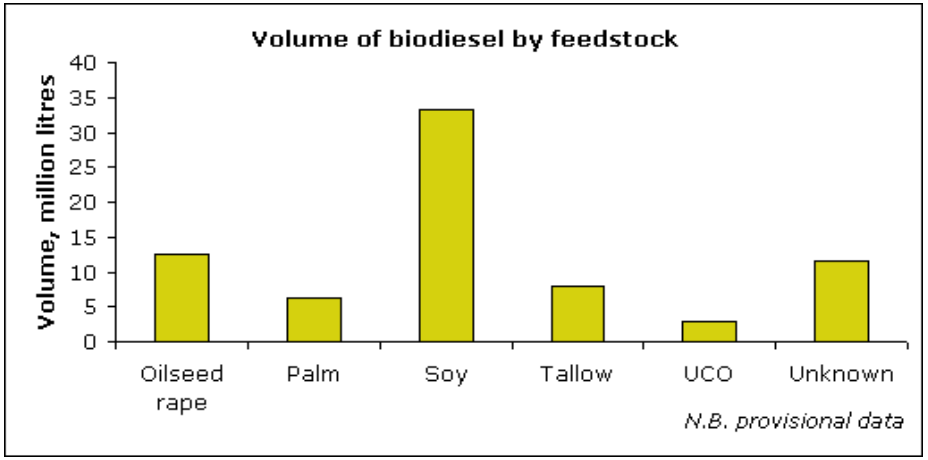
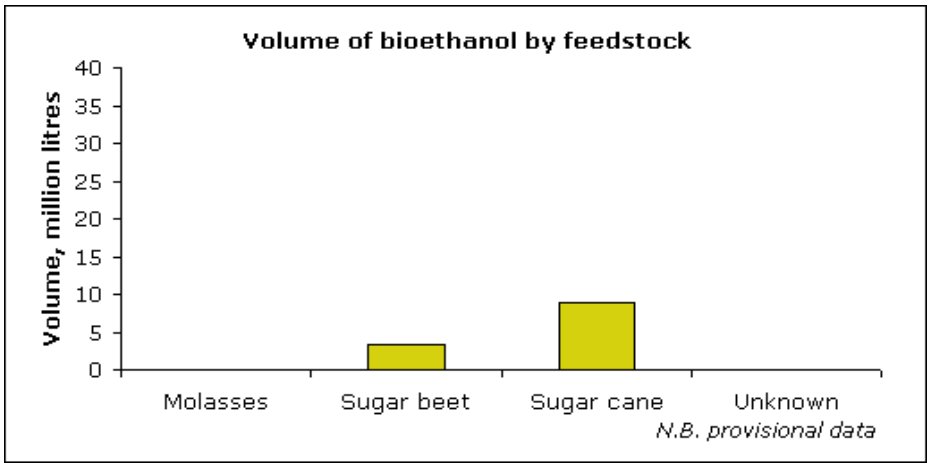
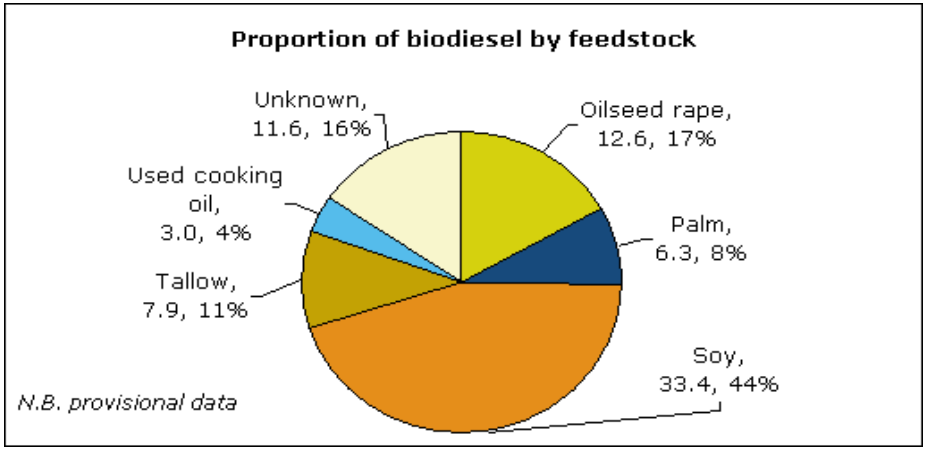
Volumes by feedstock

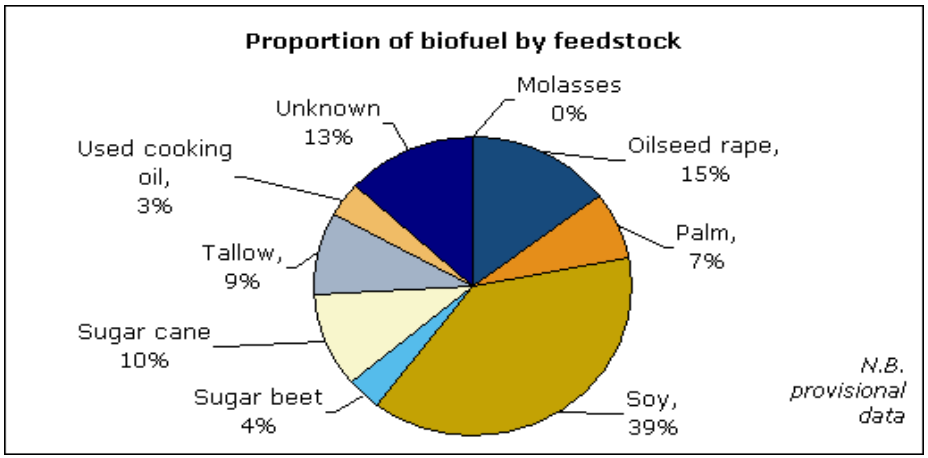


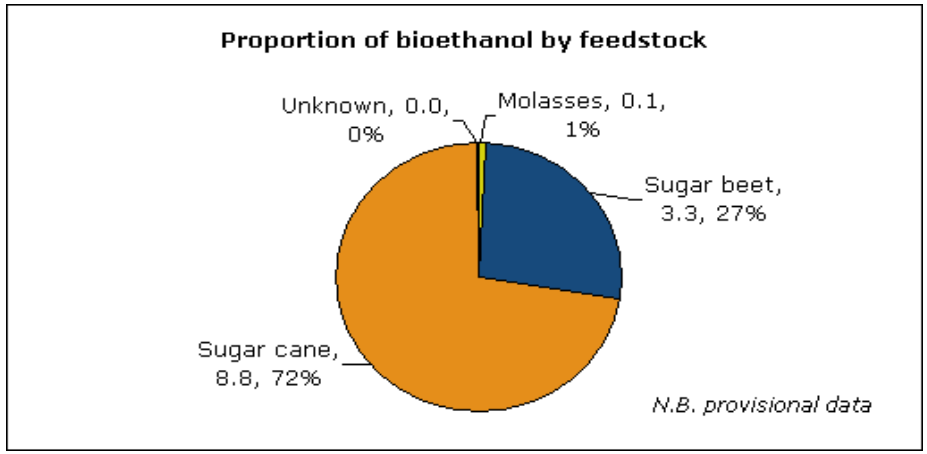




Proportions by feedstock







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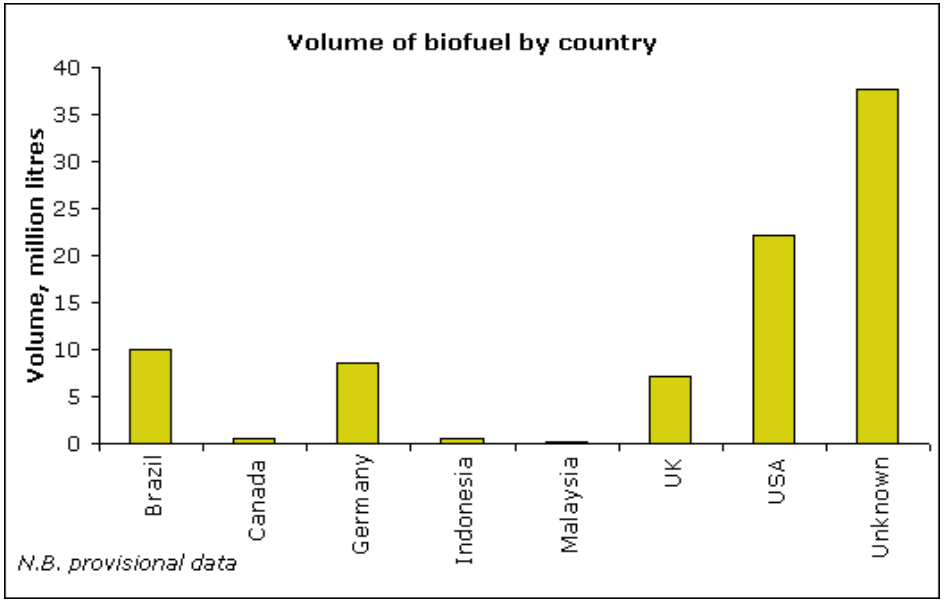
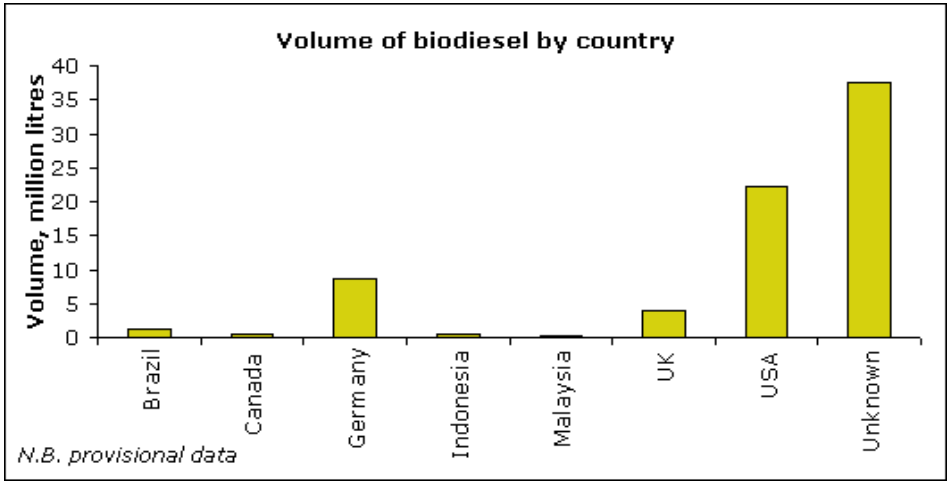
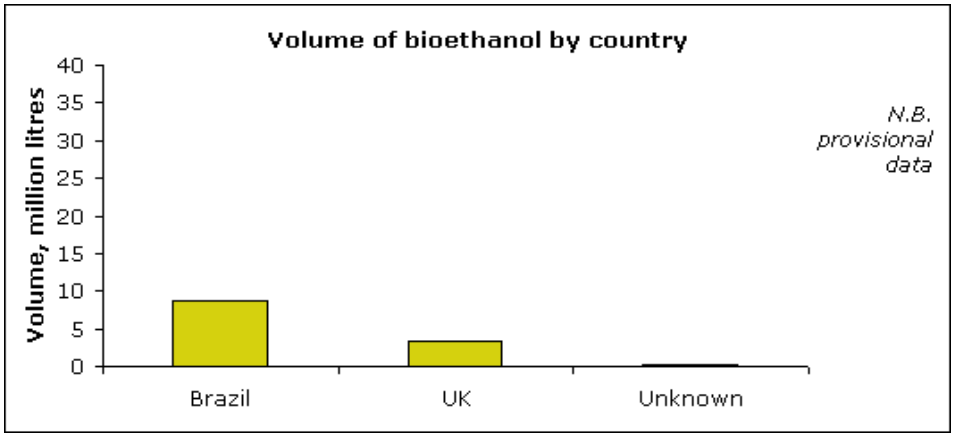
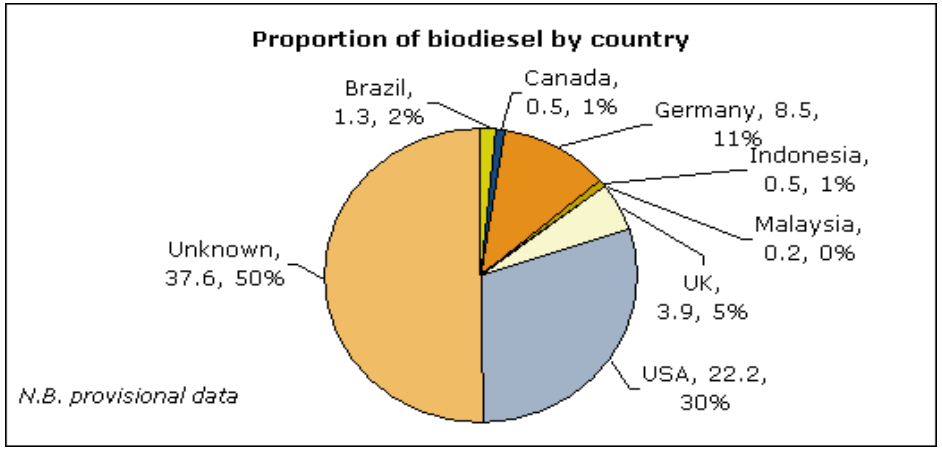
Volumes by country

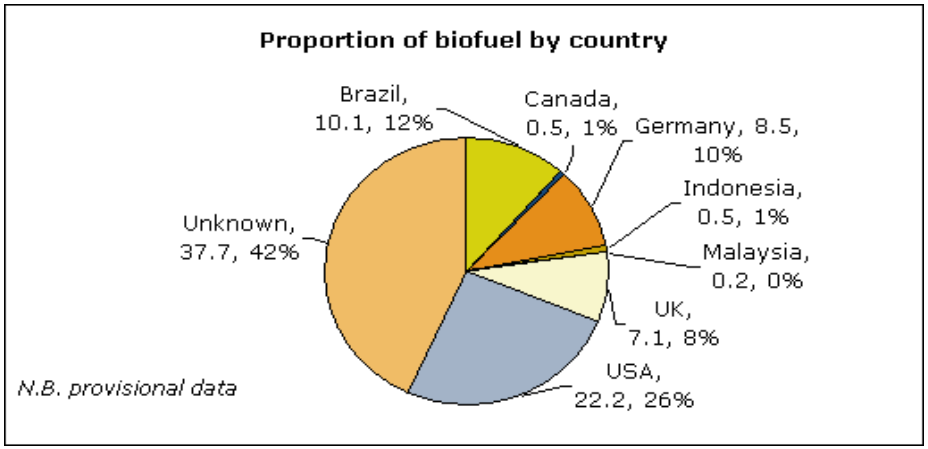


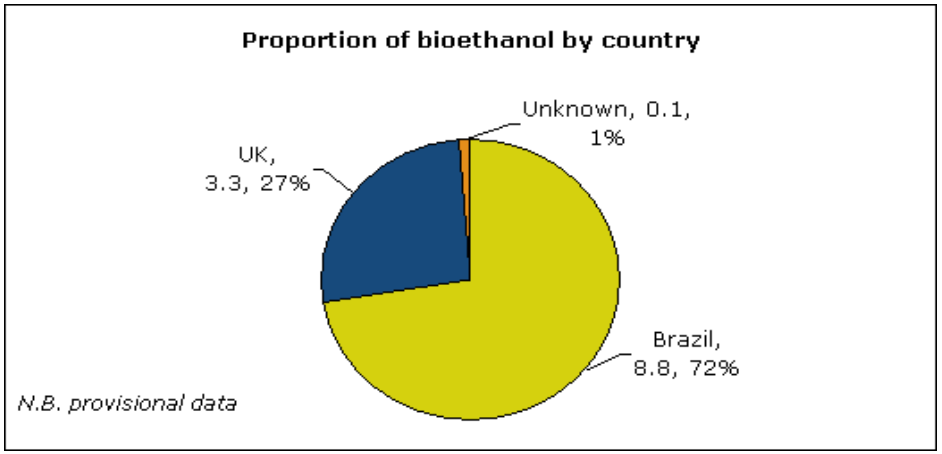




Proportions by country







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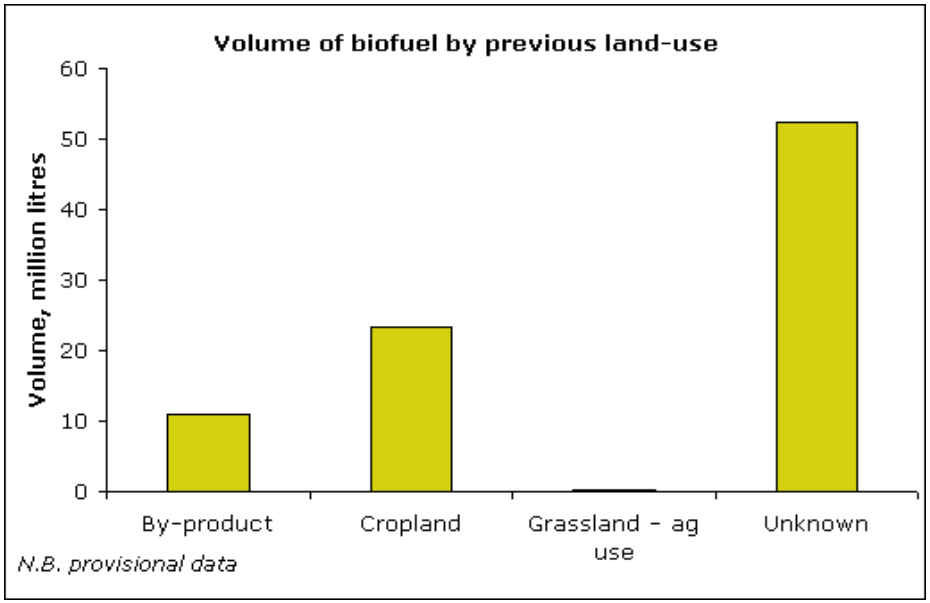
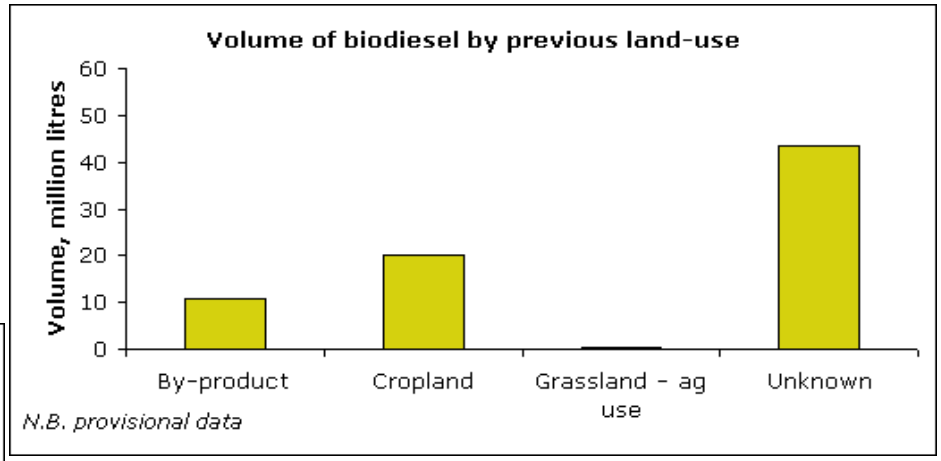
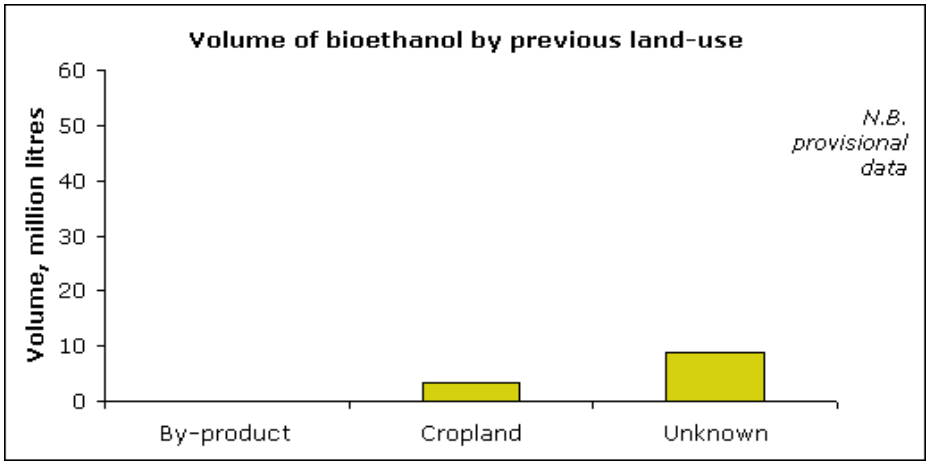
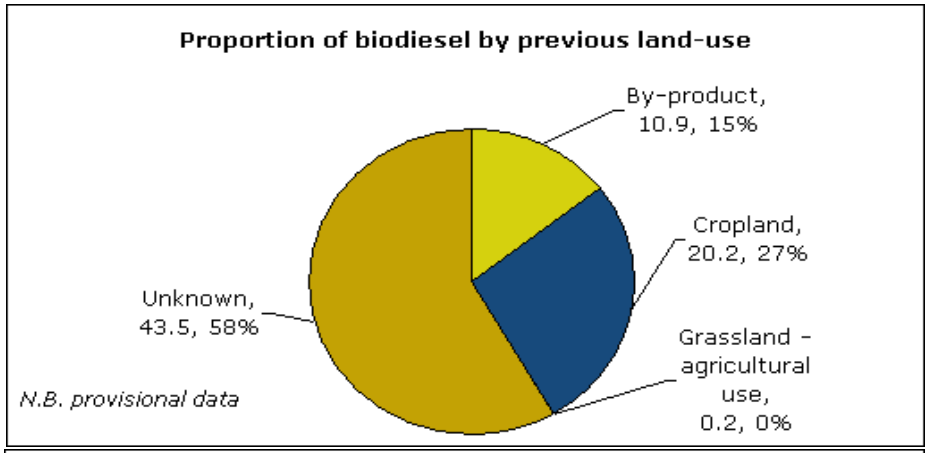
Volumes by previous land-use

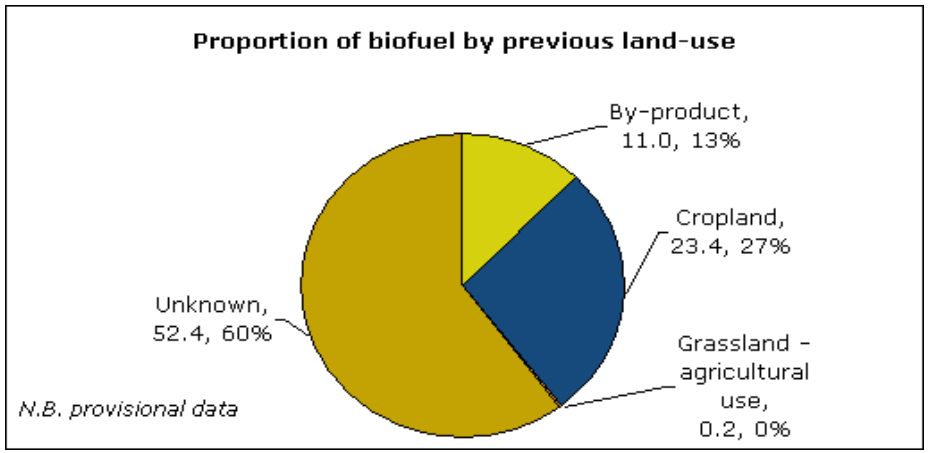


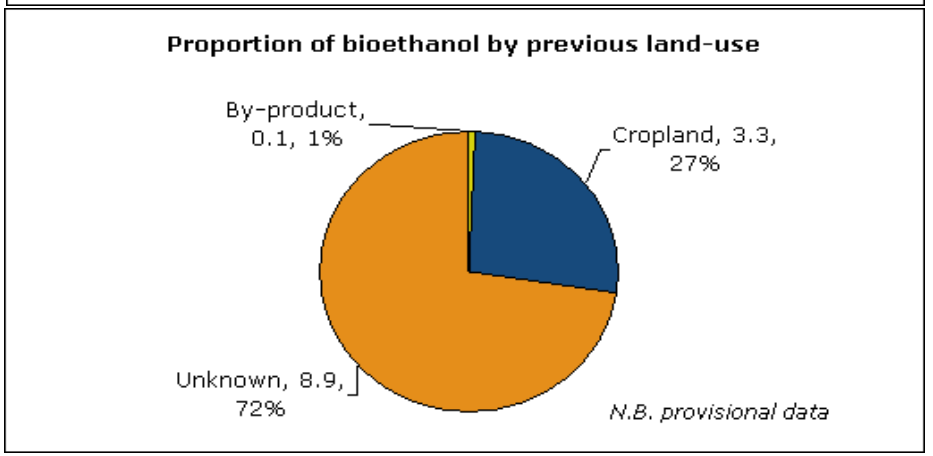




Proportions by previous land-use







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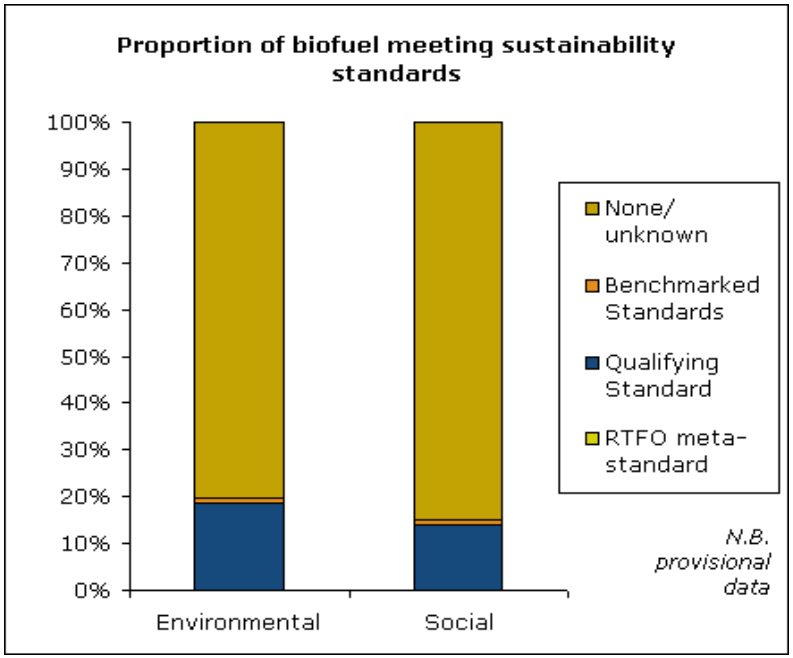
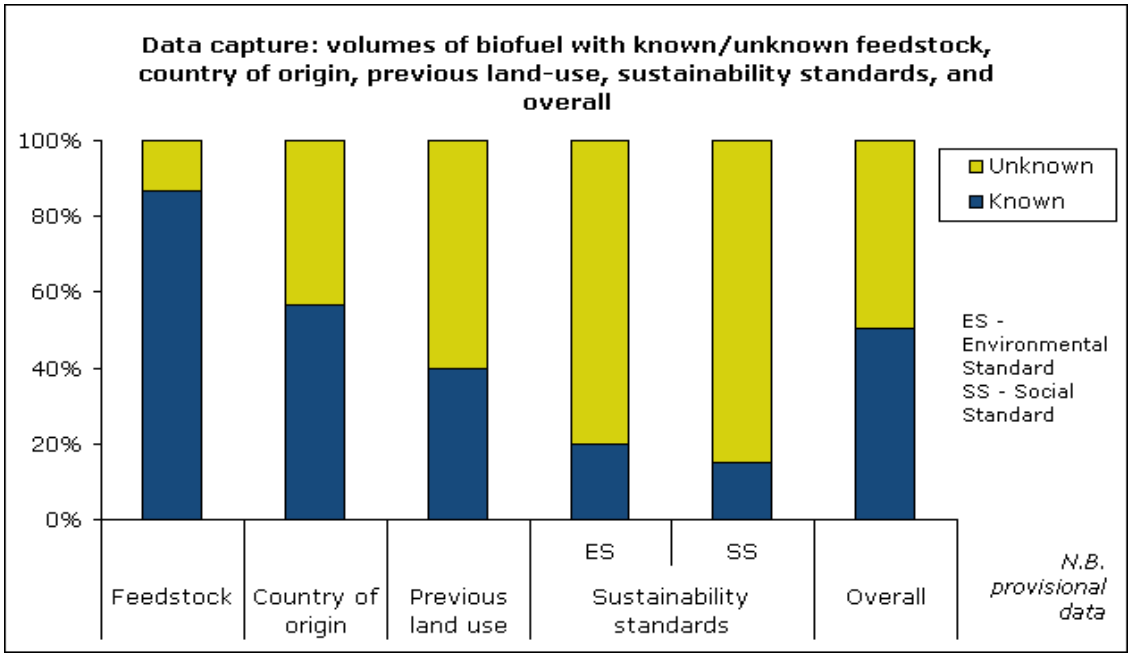
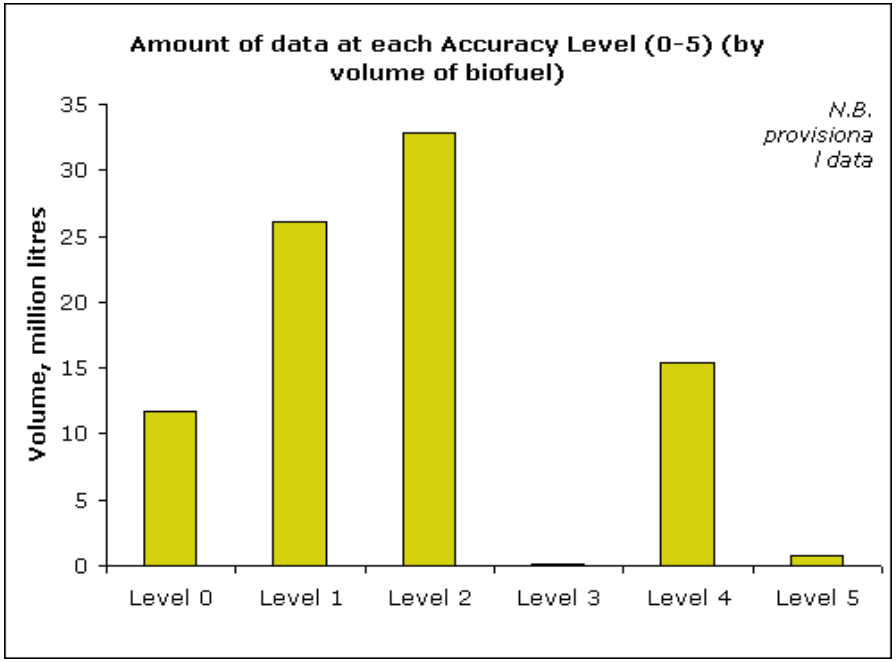
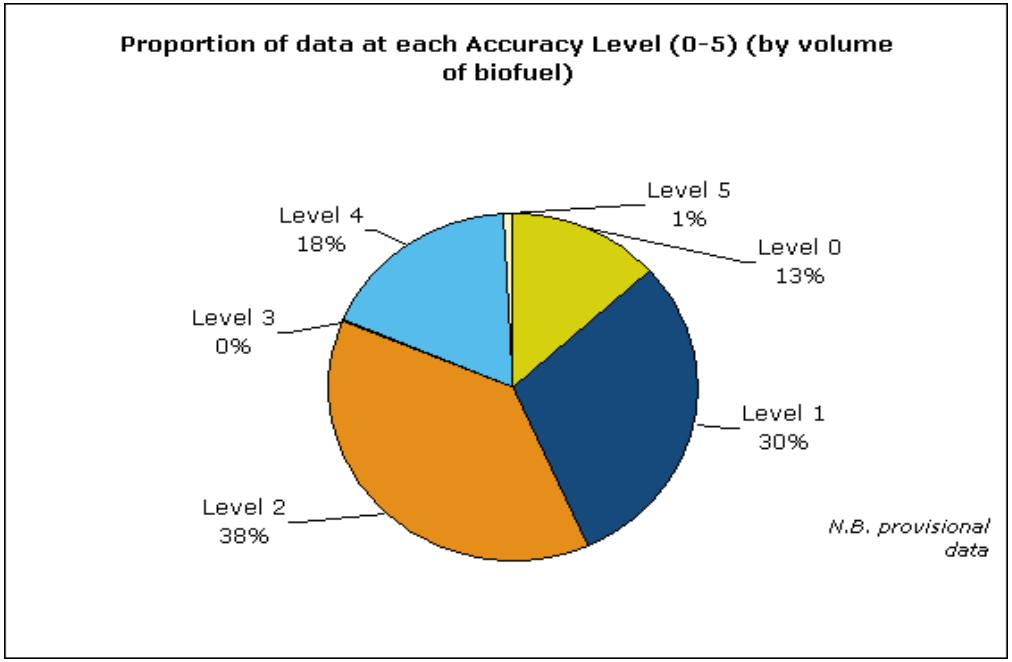
Sustainability, data-capture and accuracy






Amount of data at each Accuracy Level (0-5) (by volume of biofuel)
N.B. provisional data
Volume, million litres
35
30
25
20
15
10
5
0
Level 0
Level 1
Level 2
Level 3
Level 4
Level 5


Proportion of data at each Accuracy Level (0-5) (by volume of biofuel)
Level 5 1%
Level 4 18%
Level 0 13%
Level 3 0%
Level 1 30%
Level 2 38%
N.B. provisional data

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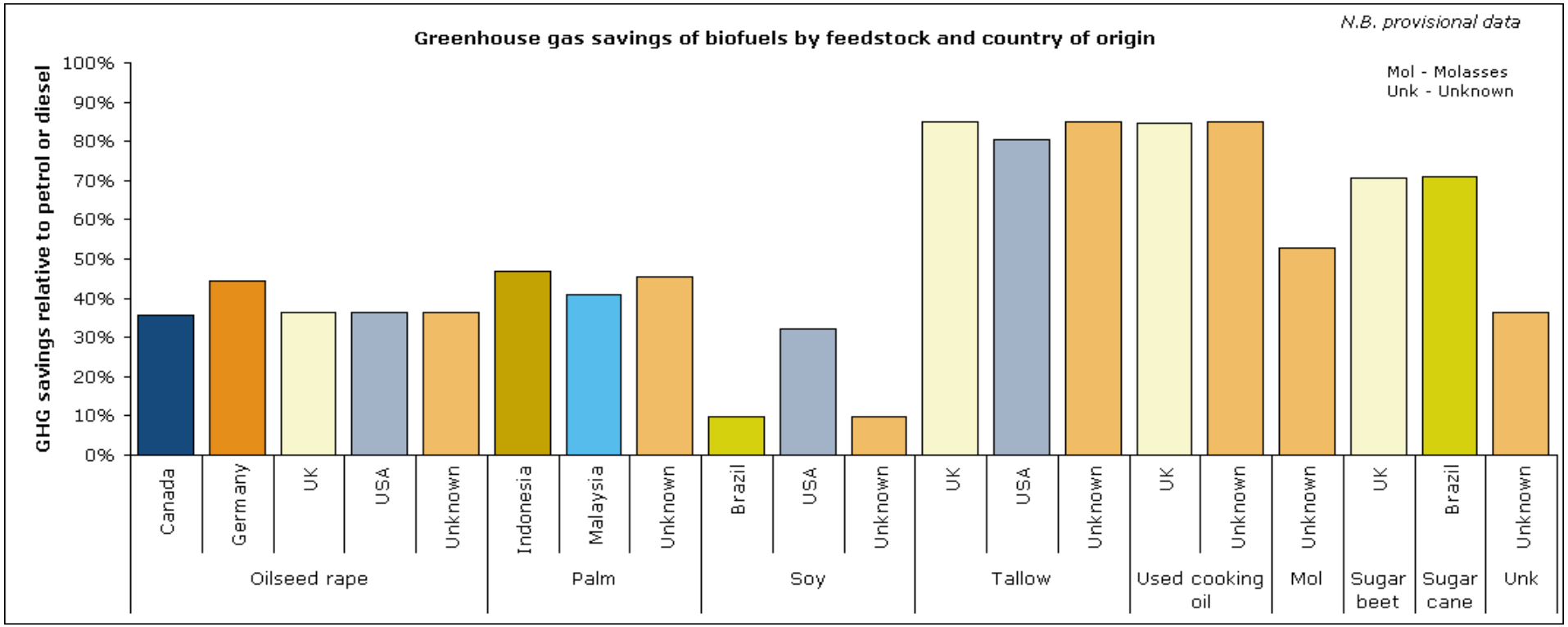
Greenhouse gas savings



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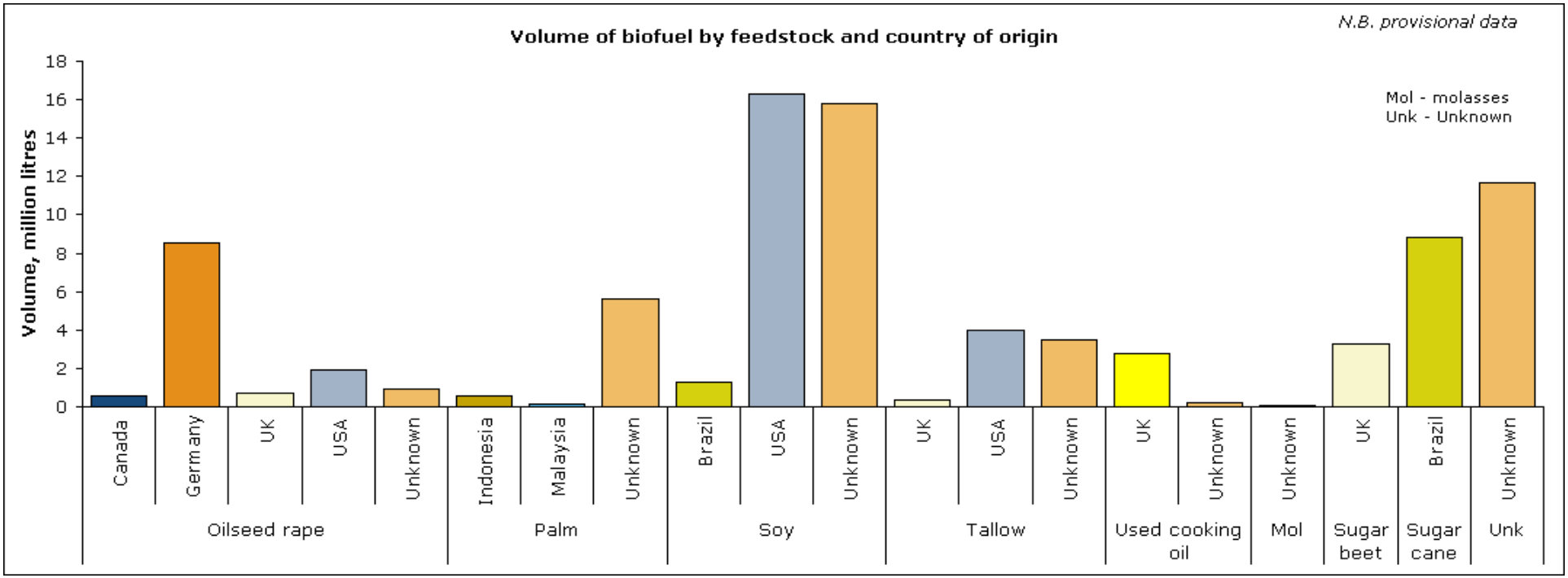
Volume by feedstock and country



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Read the notes and glossary for additional information on data in the darker shaded boxes

Table 1: Meeting the RTFO - volumes of fossil and biofuels supplied for road transport.

		Volume, millions l, or mass, millions kg	*Fuel type*	*Volume, million l*	*Biofuels as a proportion of total road transport fuels supplied*
Fuel type	*Biodiesel*	74.8	*Diesel*	2107.7	3.43%
	Bioethanol	12.2	*Petrol*	1868.5	0.65%
	Biogas	0.0			
	Total	**87.0**		**3976.3**	**2.14%**

Table 2: Carbon and sustainability data of biofuels by fuel type.

					Proportion meeting an environmental standard				*Proportion meeting a social standard*				*Carbon intensity, $g(CO_{2e})/MJ$*	*Greenhouse gas saving, %*	*Accuracy level (0-5)*
		Volume, l	*Volume, million l*	*Volume, %*	*RTFO*	*QS*	*Benchmarked*	*None/ unknown*	*RTFO*	*QS*	*Benchmarked*	*None/ unknown*			
Fuel type	*Biodiesel*	74772510	74.8	86%	0%	17%	1%	82%	0%	16%	1%	83%	54	38%	1.5
	Bioethanol	12211129	12.2	14%	0%	28%	0%	72%	0%	1%	0%	99%	25	70%	3.8
	Biogas	0	0.0	0%	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	Total	**86983639**	**87.0**	**100%**											
	Mean				**0%**	**19%**	**1%**	**80%**	**0%**	**14%**	**1%**	**85%**	**50**	**42%**	**1.8**

Table 3: Carbon and sustainability data of biodiesel from different feedstocks, countries, and according to the previous land-use.

					Proportion meeting an environmental standard				Proportion meeting a social standard				Carbon intensity, $g(CO_{2e})/MJ$	Greenhouse gas saving, %	Accuracy level (0-5)
		Volume, l	Volume, million l	Volume, %	RTFO	QS	Benchmarked	None/ unknown	RTFO	QS	Benchmarked	None/ unknown			
Feedstock	Oilseed rape	12616654	12.6	17%	0%	6%	7%	87%	0%	0%	7%	93%	50	42%	1.9
	Palm	6303001	6.3	8%	0%	7%	0%	93%	0%	7%	0%	93%	47	46%	1.1
	Soy	33365971	33.4	45%	0%	2%	0%	98%	0%	2%	0%	98%	68	21%	1.7
	Tallow	7885297	7.9	11%	0%	100%	0%	0%	0%	100%	0%	0%	15	83%	1.7
	Used cooking oil	2989271	3.0	4%	0%	100%	0%	0%	0%	100%	0%	0%	13	85%	3.1
	Unknown	11612316	11.6	16%	0%	0%	0%	100%	0%	0%	0%	100%	55	36%	0.0
	Total	**74772510**	**74.8**	**100%**											
	Mean				**0%**	**17%**	**1%**	**82%**	**0%**	**16%**	**1%**	**83%**	**54**	**38%**	**1.5**
Country of origin	Brazil	1278486	1.3	2%	0%	0%	0%	100%	0%	0%	0%	100%	78	10%	2.0
	Canada	548654	0.5	1%	0%	0%	0%	100%	0%	0%	0%	100%	56	36%	2.0
	Germany	8538956	8.5	11%	0%	0%	11%	89%	0%	0%	11%	89%	48	44%	2.0
	Indonesia	541197	0.5	1%	0%	51%	0%	49%	0%	51%	0%	49%	46	47%	2.0
	Malaysia	175048	0.2	0%	0%	100%	0%	0%	0%	100%	0%	0%	51	41%	2.0
	UK	3877723	3.9	5%	0%	100%	0%	0%	0%	82%	0%	18%	21	76%	3.0
	USA	22209404	22.2	30%	0%	21%	0%	79%	0%	21%	0%	79%	51	41%	2.4
	Unknown	37603042	37.6	50%	0%	10%	0%	90%	0%	10%	0%	90%	59	31%	0.7
	Total	**74772510**	**74.8**	**100%**											
	Mean				**0%**	**17%**	**1%**	**82%**	**0%**	**16%**	**1%**	**83%**	**54**	**38%**	**1.5**
Previous land-use	By-product	10874568	10.9	15%	0%	100%	0%	0%	0%	100%	0%	0%	15	83%	2.1
	Cropland	20184457	20.2	27%	0%	6%	5%	89%	0%	4%	5%	91%	56	36%	2.3
	Grassland - ag. use	181637	0.2	0%	0%	0%	0%	100%	0%	0%	0%	100%	48	44%	2.0
	Unknown	43531848	43.5	58%	0%	1%	0%	99%	0%	1%	0%	99%	63	28%	1.0
	Total	**74772510**	**74.8**	**100%**											
	Mean				**0%**	**17%**	**1%**	**82%**	**0%**	**16%**	**1%**	**83%**	**54**	**38%**	**1.5**

Table 4: Carbon and sustainability data of bioethanol from different feedstocks, countries, and according to the previous land-use.

					Proportion meeting an environmental standard				Proportion meeting a social standard				Carbon intensity, $g(CO_{2e})/MJ$	Greenhouse gas saving, %	Accuracy level (0-5)
		Volume, l	Volume, million l	Volume, %	RTFO	QS	Benchmarked	None/ unknown	RTFO	QS	Benchmarked	None/ unknown			
Feedstock	Molasses	96025	0.1	1%	0%	100%	0%	0%	0%	100%	0%	0%	40	53%	1.0
	Sugar beet	3262191	3.3	27%	0%	100%	0%	0%	0%	0%	0%	100%	25	71%	4.0
	Sugar cane	8808922	8.8	72%	0%	0%	0%	100%	0%	0%	0%	100%	25	71%	3.7
	Unknown	43991	0.0	0%	0%	0%	0%	100%	0%	0%	0%	100%	61	28%	0.0
	Total	**12211129**	**12.2**	**100%**											
	Mean				**0%**	**28%**	**0%**	**72%**	**0%**	**1%**	**0%**	**99%**	**25**	**70%**	**3.8**
Country of origin	Brazil	8808922	8.8	72%	0%	0%	0%	100%	0%	0%	0%	100%	25	71%	3.7
	UK	3262191	3.3	27%	0%	100%	0%	0%	0%	0%	0%	100%	25	71%	4.0
	Unknown	140016	0.1	1%	0%	69%	0%	31%	0%	69%	0%	31%	47	45%	0.7
	Total	**12211129**	**12.2**	**100%**											
	Mean				**0%**	**28%**	**0%**	**72%**	**0%**	**1%**	**0%**	**99%**	**25**	**70%**	**3.8**
Previous land-use	By-product	96025	0.1	1%	0%	100%	0%	0%	0%	100%	0%	0%	40	53%	1.0
	Cropland	3262191	3.3	27%	0%	100%	0%	0%	0%	0%	0%	100%	25	71%	4.0
	Unknown	8852913	8.9	72%	0%	0%	0%	100%	0%	0%	0%	100%	25	71%	3.7
	Total				**0%**	**28%**	**0%**	**72%**	**0%**	**1%**	**0%**	**99%**	**25**	**70%**	**3.8**
	Mean	**12211129**	**12.2**	**100%**											

Renewable Fuels Agency

Read the notes and glossary for additional information on data in the darker shaded boxes

Table 5: Carbon and sustainability data for biofuels by fuel type, feedstock, country of origin and previous land-use.

								Proportion meeting an environmental standard				Proportion meeting a social standard				Carbon intensity, $g(CO_{2e})/MJ$	Greenhouse gas saving, %	Accuracy level (0-5)
		Feedstock	Country of origin	Previous land-use	Volume, l	Volume, million l	Volume, %	RTFO	QS	Benchmarked	None/ unknown	RTFO	QS	Benchmarked	None/ unknown			
Fuel type	Biodiesel	Oilseed rape	Canada	Cropland	367017	0.4	0.4%	0%	0%	0%	100%	0%	0%	0%	100%	56	35%	2.0
				Unknown	181637	0.2	0.2%	0%	0%	0%	100%	0%	0%	0%	100%	55	36%	2.0
			Germany	Cropland	5329357	5.3	6.1%	0%	0%	18%	82%	0%	0%	18%	82%	48	44%	2.0
				Grassland - ag. use	181637	0.2	0.2%	0%	0%	0%	100%	0%	0%	0%	100%	48	44%	2.0
				Unknown	3027962	3.0	3.5%	0%	0%	0%	100%	0%	0%	0%	100%	48	44%	2.0
			UK	Cropland	373520	0.4	0.4%	0%	100%	0%	0%	0%	0%	0%	100%	55	36%	2.3
				Unknown	342258	0.3	0.4%	0%	100%	0%	0%	0%	0%	0%	100%	55	36%	2.0
			US	Unknown	1922219	1.9	2.2%	0%	0%	0%	100%	0%	0%	0%	100%	55	36%	2.0
			Unknown	Unknown	891047	0.9	1.0%	0%	0%	0%	100%	0%	0%	0%	100%	55	36%	1.0
		Palm	Indonesia	Unknown	541197	0.5	0.6%	0%	51%	0%	49%	0%	51%	0%	49%	46	47%	2.0
			Malaysia	Cropland	175048	0.2	0.2%	0%	100%	0%	0%	0%	100%	0%	0%	51	41%	2.0
			Unknown	Unknown	5586756	5.6	6.4%	0%	0%	0%	100%	0%	0%	0%	100%	47	46%	1.0
		Soy	Brazil	Unknown	1278486	1.3	1.5%	0%	0%	0%	100%	0%	0%	0%	100%	78	10%	2.0
			US	Cropland	13939515	13.9	16.0%	0%	5%	0%	95%	0%	5%	0%	95%	59	32%	2.5
				Unknown	2331900	2.3	2.7%	0%	0%	0%	100%	0%	0%	0%	100%	58	33%	2.0
			Unknown	Unknown	15816070	15.8	18.2%	0%	0%	0%	100%	0%	0%	0%	100%	78	10%	1.0
		Tallow	UK	By-product	354983	0.4	0.4%	0%	100%	0%	0%	0%	100%	0%	0%	13	85%	2.0
			US	By-product	4015770	4.0	4.6%	0%	100%	0%	0%	0%	100%	0%	0%	17	80%	2.3
			Unknown	By-product	3514544	3.5	4.0%	0%	100%	0%	0%	0%	100%	0%	0%	13	85%	1.0
		Used cooking oil	UK	By-product	2806962	2.8	3.2%	0%	100%	0%	0%	0%	100%	0%	0%	13	85%	3.3
			Unknown	By-product	182309	0.2	0.2%	0%	100%	0%	0%	0%	100%	0%	0%	13	85%	1.0
		Unknown	Unknown	Unknown	11612316	11.6	13.4%	0%	0%	0%	100%	0%	0%	0%	100%	55	36%	0.0
	Bioethanol	Molasses	Unknown	By-product	96025	0.1	0.1%	0%	100%	0%	0%	0%	100%	0%	0%	40	53%	1.0
		Sugar beet	UK	Cropland	3262191	3.3	3.8%	0%	100%	0%	0%	0%	0%	0%	100%	25	71%	4.0
		Sugar cane	Brazil	Unknown	8808922	8.8	10.1%	0%	0%	0%	100%	0%	0%	0%	100%	25	71%	3.7
		Unknown	Unknown	Unknown	43991	0.0	0.1%	0%	0%	0%	100%	0%	0%	0%	100%	61	28%	0.0
	Total				**86983639**	**87**	**100%**											
	Mean							**0%**	**19%**	**1%**	**80%**	**0%**	**14%**	**1%**	**85%**	**50**	**42%**	**1.8**