

Carbon and Sustainability reporting within the Renewable Transport Fuel Obligation

Technical Guidance Part One

Renewable Fuels Agency

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Year Four of the RTFO
15 April 2011 – 14 April 2012*

*Note this Guidance may be superseded part way through the obligation year if a new RTFO Order to implement the requirements of the EU Renewable Energy Directive is introduced during the period

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Executive summary

The Renewable Transport Fuel Obligation

The Renewable Transport Fuel Obligation (RTFO) is one of the Government's main policies for reducing greenhouse gas emissions from road transport. The RTFO commenced on 15 April 2008 and is intended to deliver reductions in carbon dioxide emissions from the road transport sector by encouraging the supply of renewable fuels.

The greenhouse gas (GHG) and sustainability impacts of different biofuels vary significantly. The GHG benefits of biofuels depend, among other things, on the system of cultivation, processing and transportation of feedstock. The introduction of biofuels can also lead to unintended negative environmental and social impacts. Maintaining public confidence in biofuels requires Government and the biofuels industry to find effective ways to manage the potential negative impacts of their increased demand.

EU Renewable Energy Directive

The European Renewable Energy Directive (RED) was published in June 2008. The text contains a framework for carbon and sustainability requirements that all biofuel sold in the EU will have to meet if it is to count towards the European targets. The requirements include mandatory aspects as well as reporting requirements, both of which need to be implemented by Member States. The RTFO will have to adapt to be in line with the European requirements.

With the aim of helping UK industry best prepare for the RED, Year Three of the RTFO was adapted to become 'RED-ready', with as many of the RTFO carbon and sustainability (C&S) requirements as possible being updated to reflect the RED's forthcoming requirements. However, at the time it was not possible to make the RTFO entirely RED-compliant, as certain details of the RED requirements were yet to be published by the European Commission (EC). The approach was therefore taken to implement only those changes to the RTFO that would run a low risk of having to be reversed as further details become available from the EC throughout the year.

Year Three of the RTFO saw a number of publications from the EC, which enable the RTFO to take a step closer to consistency with the RED requirements. However, there are still a number of outstanding issues that are yet to be published that may have an impact on the C&S guidelines.

The same approach has therefore been taken for Year Four of the RTFO – to adapt those aspects of the RTFO C&S Technical Guidance where there is a low risk of decisions having to be reversed as further details become available from the EC.

These changes will align the RTFO with the RED requirements, but the scheme will continue to be based on reporting rather than mandatory minimum performance requirements until the Government introduces amending legislation. Therefore, whilst the amendments aim to make it transparent to suppliers whether consignments of fuel meet the RED mandatory requirements, RTF certificates will still be issued even where suppliers report fuels that do not meet the minimum RED criteria.

At the time of writing the Department for Transport (DfT) are consulting on changes to the RTFO Order to implement the RED and Fuel Quality Directive (FQD). DfT aims to implement the RED/FQD mandatory sustainability requirements in the RTFO by the end of 2011. The RTFO Administrator will consult on any further changes to the C&S requirements before full RED implementation.

The reporting framework

To encourage suppliers to source sustainable biofuels the Renewable Fuels Agency (RFA) requires biofuel suppliers to submit reports on both the net GHG saving and the sustainability of the biofuels they supply, in order to receive Renewable Transport Fuel Certificates (RTFCs). These reports address the *direct* impacts arising from biofuel cultivation. The RFA has introduced a methodology suppliers could follow to develop biofuel projects with a low risk of indirect land-use change (iLUC). This can be reported by suppliers on a voluntary basis in their Annual Report. The RTFO Administrator will separately monitor the potential indirect impacts of biofuel production such as indirect land-use change or changes to food and other commodity prices.

The reporting framework is designed to encourage the supply of those biofuels which deliver a high level of greenhouse gas savings in a sustainable way and is an essential 'stepping-stone' towards a mandatory assurance scheme. This first step was necessary due to the limited availability of data and the need to test the robustness

of the RTFO criteria and methodology in the absence of comprehensive internationally agreed standards. There were also concerns that the unilateral adoption by the UK of a mandatory assurance scheme could have given rise to possible breaches of World Trade Organisation rules.

The introduction of the EU RED will introduce mandatory carbon and sustainability criteria that suppliers will have to meet. The RFA made the RTFO 'RED-Ready' from Year Three of the scheme and the scheme will continue as such from the start of Year Four and until full RED implementation by the DfT. Note that RTFCs will still be issued for biofuels reported in the RED-Ready period, without those biofuels meeting the RED mandatory criteria. The RTFO Administrator will continue to ask suppliers to report on broader sustainability aspects than the RED mandatory requirements to encourage the supply of the most sustainable biofuel for the RED-ready period of Year Four.

The RTFO Administrator currently allows transport fuel suppliers to report that they do not have information on the sustainability or otherwise of their biofuel. This is in recognition of the fact that it may be difficult to provide information for some fuels – particularly those purchased on the spot market. From the implementation of the RED, reporting 'unknown' on certain aspects (likely to be feedstock, NUTS2 level feedstock origin {unless actual cultivation data is used} and previous land-use) will no longer be allowed.

The RTFO Administrator also requires annual, independently verified reports of overall supplier performance from suppliers applying for certificates. These reports demonstrate suppliers' performance in sourcing sustainable biofuels with good GHG savings¹.

The RFA reports annually on the impacts of the RTFO. The first two Annual Reports are available on the [RFA website](#).

Reporting requirements

Obligated suppliers who wish to claim RTFCs must submit monthly and, if they apply for 450,000 or more certificates in an obligation period, Annual C&S Reports². Monthly reports should be submitted by the 14th day of the month following the month in which the fuel

¹ Suppliers claiming fewer than 450,000 RTFCs in an obligation period do not need to submit an Annual Report.

² Note this small supplier exemption may not be permitted under the RED.

was supplied, or the previous working day where this falls on a weekend or public holiday. For example, reports for the period 15 June 2011 to 14 July 2011 (inclusive) would be due by 12 August 2011. Non-obligated suppliers must report whenever they wish to claim RTFCs.

Under the RTFO Order, obligation periods run from 15 April to 14 April³ of the following calendar year. Annual Reports must be submitted by 28 September⁴ in the same year and must be accompanied by an independent verifier's statement.

Monthly reports

As explained above, obligated suppliers must report monthly on the fuels they have supplied, and non-obligated suppliers must report whenever they wish to receive RTFCs for the fuel they supply. The term 'monthly reporting' is used throughout this document to differentiate these reports from Annual Reports.

Monthly reports must list the 'consignments' of feedstock or fuel. A 'consignment' (or 'administrative consignment' – formally referred to as a 'batch') has homogenous sustainability characteristics. The summary monthly data sheet is represented in Table A.

³ Note this Guidance may be superseded part way through the obligation year if a new RTFO Order to implement the requirements of the EU RED is introduced during the period.

⁴ The Department for Transport are consulting on introducing an earlier date of 12 August for final verification in their proposals for implementing the RED. Suppliers should be aware that the verification date could move forwards for Year Four.

Table i Monthly reporting summary format – example data

General information						Country of origin information		Sustainability information				Carbon information		Other information		Indicative RED-Ready			
Consign-ment no.	Internal Consign-ment no.	Fuel type	Quantity of fuel (litres)	Biofuel Feedstock	Biofuel Production Process	Country	NUTS2 compliant region	Standard	Env Level	Social Level	Land-use on 1 Jan 2008	Carbon intensity, gCO ₂ e/MJ	Accuracy level	Plant in operation on 23 Jan 2008?	Equivalence trading	GHG	Biodiversity	C-stock	RED-ready
33001		Bioethanol	250,000	Wheat	Unknown	UK	Y	LEAF	QS	-	Cropland – non-protected	70	1	Y	N	Y	Y	Y	Y
33002		Bioethanol	100,000	Wheat	Natural gas CHP	France	FR51	RED - Biodiv.	-	-	Cropland – protected	44	2	N	N	N	Y	Y	N
33003		Bioethanol	250,000	Sugar beet	-	UK	N	Red Tractor	QS	-	Cropland – non-protected	35	6	Y	Y	Y	Y	Y	N
33004		Bioethanol	1,000,000	Sugar cane	-	Brazil	N/A	RTFO Meta-Standard	RTFO	RTFO	Cropland – non-protected	24	1	Y	N	Y	Y	Y	Y
33005		Bioethanol	500,000	Unknown	-	Unknown	Unknown	Unknown	-	-	Unknown	115	0	Y	-	Y	N	N	N
33006		Biodiesel	1,000,000	Oilseed rape	-	UK	Y	Red Tractor	RTFO	RTFO	Cropland – non-protected	52	1	Y	N	Y	Y	Y	Y
33007		Biodiesel	250,000	Oilseed rape	-	Unknown	Unknown	Unknown	-	-	Unknown	52	1	Y	-	Y	N	N	N
33008		Biodiesel	500,000	Palm oil	Methane capture	Malaysia	N/A	RSPO-Greenpalm	QS	QS	Cropland – non-protected	37	2	Y	N	Y	Y	Y	N
33009		Biodiesel	500,000	Soy	-	Argentina	N/A	RTRS	QS	RTFO	Grassland – ag. use	94	1	Y	N	Y	N	Y	N
33010		Biodiesel	250,000	UCO	-	UK	N/A	By-product	QS	QS	By-product	14	1	N	N	Y	Y	Y	Y
33011		Biogas	150,000	Dry manure	-	UK	N/A	By-product	QS	QS	By-product	15	1	Y	N	Y	Y	Y	Y

QS = Qualifying Standard; RTFO = RTFO Meta-standard

Annual Reports

Annual Reports contain aggregate monthly information and in addition, details of:

- Actions that have been taken to increase the sourcing of sustainable biofuels and biofuels with a lower carbon intensity, including actions to promote biofuels projects with a low risk of iLUC;
- Environmental management system certificates;
- Successful prosecutions for breaches of compliance with any environmental and/or social regulations related to biofuels activities;
- Existing verified environmental or corporate responsibility reporting.

Scope and principles for RTFO C&S reporting

Greenhouse gas reporting

The GHG calculation methodology is based on a well-to-wheel approach, defined by the RED, which includes all significant sources of GHG emissions. This enables direct comparison of fuel chain GHG savings on a like for like basis. The carbon intensity reported for a consignment of biofuel can be calculated from actual data, a default value can be used, or a combination of actual data and default inputs can be used.

Default values have been provided for a number of key biofuels. Some of these default values were developed by the European Commission and some were developed by the RFA. Both are accepted by the RTFO Administrator in this pre-RED implementation period but once the RED is implemented the RFA defined default values will no longer be able to be used.

Commission defined default values are available for:

- Bioethanol, ETBE⁵ and TAAE⁶ from sugar beet, sugar cane, wheat and European Community produced corn (natural gas as process fuel in CHP plant);
- FAME⁷ biodiesel from oilseed rape, palm, soy beans, sunflower, UCO and tallow (excluding category 3 tallow)⁸;
- Hydrotreated biodiesel (dedicated processing only, not co-processed) from rape seed, palm, soy beans, sunflower;
- Biogas (as CNG⁹) from dry manure, wet manure and municipal organic waste;
- Pure plant oil from rape seed.

Note: Annex V of the RED also includes default values for several 'future biofuels' (see Part B of Annex V).

RFA defined default values (not accepted post-RED implementation) are available for:

- Bioethanol, ETBE and TAAE from: EC produced corn (process not specified), non-EC corn, corn (unknown origin), barley, cassava, molasses, spent sulphite liquor, sweet sorghum and triticale.
- FAME biodiesel from: coconut, corn oil, jatropha and tallow (category 3 or unknown category).
- Hydrotreated biodiesel (dedicated processing only, not co-processed): coconut, soy, jatropha.
- Co-processed biodiesel from: coconut, jatropha, oilseed rape, palm, soy, sunflower and tallow (category 3 or unknown category).
- Pure plant oil from soy.

Suppliers who have access to specific information about their supply chain can use qualitative or quantitative data to improve the accuracy of the calculation. Part Two of this Technical Guidance outlines procedures for using this data. There is a software tool for fuel suppliers called the [Carbon Calculator](#) which can help prepare monthly reports to the RTFO Administrator, as well as the aggregate data tables for inclusion in suppliers' Annual Reports.

⁵ Ethyl tertiary butyl ether

⁶ Tertiary amyl ethyl ether

⁷ Fatty acid methyl ester

⁸ The default value used for UCO and tallow (excluding category 3 tallow) is that provided for in the RED as waste vegetable and animal oil.

⁹ Compressed natural gas

This tool can also help calculate carbon intensity values using actual data for fuel chains.

If a default value is not available, suppliers must use actual data to calculate the carbon intensity of their fuel or use the fuel level default value. Note that the latter of these options will not be permitted post-RED implementation. Part Two of the C&S Technical Guidance provides guidance and rules on reporting actual data.

Land-use change

Where information on previous land use has been supplied the emissions from land-use change must be added to the overall carbon intensity of the fuel. Default values for specific land-use changes are based on the new guidelines provided by the Commission for the calculation of land carbon stocks¹⁰ (hereafter referred to as the 'Decision on the methodology for calculating land carbon stocks'). Where information is not provided (i.e. 'unknown' is reported) the calculation does not require the use of a default value for land-use change impacts. This approach will no longer be acceptable when the RED is implemented.

Environmental and social principles

The principal environmental and social risks arising from biofuel production (such as deforestation and loss of biodiversity) arise at the farm/plantation. Therefore sustainability reporting is focused on this part of the supply chain. This is also the case for the forthcoming RED sustainability requirements.

The RTFO reporting scheme is based on a 'meta-standard' approach. The RTFO Meta-Standard comprises seven principles identified in Table B. Existing agri-environment and social accountability schemes (also referred to as 'voluntary schemes') have been benchmarked to assess the extent to which the feedstock produced can be considered sustainable.

¹⁰ Commission Decision of 10 June 2010 on guidelines for the calculation of land carbon stocks for the purpose of Annex V to Directive 2009/28/EC. (2010/335/EU)

Table ii Environmental and social principles

Environmental principles
1. Biomass production will not destroy or damage large above or below ground carbon stocks
2. Biomass production will not lead to the destruction of or damage to high biodiversity areas
3. Biomass production does not lead to soil degradation
4. Biomass production does not lead to the contamination or depletion of water sources
5. Biomass production does not lead to air pollution
Social principles
6. Biomass production does not adversely affect workers rights and working relationships
7. Biomass production does not adversely affect existing land rights and community relations

Benchmarked standards that meet the required level of sustainability are called 'Qualifying Standards'. Some benchmarked standards meet the full RTFO Social Meta-Standard, but none currently fully meet the RTFO Environmental Meta-Standard. Therefore none fully meet the RTFO Biofuel Sustainability Meta-Standard (see Table C). Suppliers are able to report compliance with any standard that has been benchmarked against the Meta-Standard.

Suppliers are also able to provide evidence of successful supplementary checks to demonstrate that feedstock complies with all the Meta-Standard criteria if they so wish.

The RED sets mandatory minimum sustainability requirements on the following elements:

- **Biodiversity (Article 17.3):** Biofuels may not be made from raw material obtained from land with **high biodiversity value** in or after January 2008. (Further detail is expected from the EC on the definition of highly biodiverse grassland.)
- **Carbon stock and peatlands (Article 17.4 and 17.5):** Biofuels may not be made from raw material obtained from land with **high carbon stock** or land that was undrained peatland in or after January 2008.

- **Cross compliance (Article 17.6):** Biofuel feedstocks grown in the European Community must be cultivated according to the EC's 'Cross Compliance' requirements (part A and point 9 of Annex II to Council Regulation (EC) No 73/2009 of 19 January 2009).

The EC will undertake formal assessments of voluntary schemes (that have applied for recognition) to judge whether they deem the schemes appropriate to demonstrate compliance with the RED sustainability requirements, including the GHG and land-use criteria (biodiversity, carbon stocks and peatlands), the chain of custody and audit quality requirements¹¹. The RFA understands that voluntary schemes will be recognised by the EC for a specific scope, e.g. certain feedstocks, geographies, one or more of the land-use criteria, the GHG criterion and the possibility to calculate actual values, and/or the mass balance chain of custody.

Those voluntary schemes that are recognised by the EC will automatically be recognised in the RTFO, for the same scope recognised by the EC. EC-recognised schemes are able to be used to demonstrate 'RED-Ready' biofuel in Year Four of the RTFO. At the time of writing no voluntary schemes have been recognised by the EC, although a number are known to have applied for recognition.

In the interim, the RFA has benchmarked existing RTFO Environmental Qualifying Standards against the mandatory RED sustainability criteria. Note: these benchmarks were conducted for indicative purposes before all details of the RED and Communications were published and therefore do not guarantee that these voluntary schemes will have the same assessment results as the EC.

The existing Environmental Qualifying Standards in general show a good coverage of the current wording of the biodiversity criterion (see Table C)¹². Reporting an Environmental Qualifying Standard that covers the RED biodiversity criterion or the full RTFO Meta-Standard can be used to demonstrate RED-readiness against the biodiversity criterion.

¹¹ The RED also permits the use of recognised bilateral or multilateral agreements concluded by the European Union with third countries to demonstrate compliance with sustainability requirements. At the time of writing the RFA are not aware of any bilateral or multilateral agreements under discussion with the EC. However, as soon as this is the case, the RTFO Administrator would include this as a reporting option for economic operators in an appropriate manner.

¹² Note that a benchmark of non-Qualifying Standards showed that none of these currently cover both the RED biodiversity criterion and meet the norm for audit quality.

The RFA also intends to allow independent audit against the EC biodiversity criterion itself (RED Biodiversity Audit). This will only become possible once further details are made available by the EC.

Existing Environmental Qualifying Standards do not show a good coverage of the EC carbon stock criterion. Reporting against the carbon stock criterion is enabled mainly through the previous land use column of the monthly reports (see Annex H), but can also be met by reporting an Environmental Qualifying Standard that covers the RED carbon criterion or by reporting the full RTFO Meta-Standard.

The RFA recognises that there are some wider environmental and social issues (such as land-use change arising as an indirect result of biofuel production or the impacts of biofuels on commodity prices) that are difficult to monitor and manage effectively at the fuel supplier level. The RFA has published a report on these potential effects as part of its first [Annual Report](#) to Parliament.

The RFA also commissioned work to develop a methodology that can objectively distinguish biofuels from energy crops with a low risk of indirect effects. The methodology aims to enable individual companies to initiate projects that can demonstrate that the resultant biofuel has a low risk of causing indirect land-use change. The methodology is included as an option for suppliers to use. Details are in Annex E. Suppliers are required to report on whether they have initiated such projects as well as other specified activities to support sustainable biofuels in their Annual Report. Details are in Chapter 4 of this guidance.

Table iii Benchmarked and Qualifying Standards

The table illustrates whether the standard is an environmental or social Qualifying Standard, and whether the standard meets the RED criteria on biodiversity and carbon stocks. **N.B. some standards have developed additional optional criteria for RED/EU market access which affect 'RED-readiness'. Suppliers need to determine whether these optional criteria were met to claim the 'incl. RED criteria' version.** See Annex A for further details. Schemes marked with '*' have been benchmarked by the European Commission.

Benchmarked standard	Indicative RED Biodiversity Criterion?	Indicative RED Carbon Stocks Criterion?	RTFO Environmental. Meta-Standard?	RTFO Social Meta-Standard?	Qualifying Environmental Standard?	Qualifying Social Standard?	Meets norm for audit quality?
Standards that meet Qualifying Standard level or RED sustainability criteria							
Abengoa RED Bioenergy Sustainability Assurance *	Yes	Yes	-	-	-	-	-
Biomass Biofuels voluntary scheme *	Yes	Yes	-	-	-	-	-
Bonsucro (formerly Better Sugar Cane Initiative, BSI)	-	-	No	No	No	Yes	Yes
Bonsucro (formerly Better Sugar Cane Initiative, BSI) incl. RED criteria *	Yes	Yes	No	No	No	Yes	Yes
Forest Stewardship Council (FSC)	No	No	No	No	Yes	No	Yes
Genesis Quality Assurance (Genesis QA)	Yes	No	No	No	Yes	No	Yes
Greenenergy Brazilian Bioethanol ver. prog. *	Yes	Yes	-	-	-	-	-
International Sustainability and Carbon Certification (ISCC) *	Yes	Yes	No	No	No	No	No
Linking Environment And Farming Marque (LEAF)	No	No	No	No	Yes	No	Yes
Red Tractor (formerly Assured Combinable Crops Scheme, ACCS)	Yes	No	No	No	Yes	No	Yes
Round Table on Responsible Soy (RTRS)	No	No	No	Yes	Yes	Yes	-

Benchmarked standard	Indicative RED Biodiversity. Criterion?	Indicative RED Carbon Stocks Criterion?	RTFO Environmental. Meta-Standard?	RTFO Social Meta-Standard?	Qualifying Environmental Standard?	Qualifying Social Standard?	Meets norm for audit quality?
Round Table on Responsible Soy EU RED (RTRS) *	Yes	Yes	No	Yes	Yes	Yes	-
Roundtable on Sustainable Biofuels	-	-	No	No	Yes	Yes	Yes
Roundtable on Sustainable Biofuels incl. RED criteria *	Yes	Yes	No	No	Yes	Yes	Yes
Roundtable on Sustainable Palm Oil (RSPO)	Yes	No	No	No	Yes	Yes	Yes
Roundtable on Sustainable Palm Oil (RSPO) – GreenPalm	No	No	No	No	Yes	Yes	Yes
Sustainable Agriculture Network/Rainforest Alliance (SAN/RA)	Yes	No	No	No	Yes	Yes	Yes
Standards that do not meet Qualifying Standard level							
Basel criteria for soy (Basel)	-	-	No	No	Yes	Yes	-
FEDIOL	-	-	No	No	No	No	-
Qualität und Sicherheit (QuS)	-	-	No	No	No	No	-
GlobalGAP	-	-	No	No	No	No	-
International Federation of Organic Agriculture Movements (IFOAM)	-	-	No	No	No	No	-
ProTerra	-	-	No	No	No	No	-
Scottish Quality Crops (SQC)	-	-	No	No	No	No	Yes
Social Accountability 8000 (SA8000)	-	-	No	No	No	No	No

Treatment of by-products¹³

To minimise the burden on business, suppliers are not required to report on criteria where the risk of adverse direct impacts is minimal. An objective, risk-based metric has been used to develop this principle. Therefore, where a feedstock represents less than 10% of the farm or factory gate value it is considered a by-product.

Biofuel producers purchasing these by-products will generally have little influence on the sustainability of the production process for the original product. For example, a biofuel producer buying tallow will have little or no influence on the standards applied to rearing the cattle. All feedstock considered by-products (such as used cooking oil and tallow) are listed in Annex B and suppliers are not required to report on the sustainability standard or land-use in respect of biofuels produced from these feedstocks. Instead, suppliers should report all general information required and then enter 'by-product' into the remaining sustainability columns within the monthly report. Suppliers are, however, still required to report the carbon intensity of such fuels.

If a supplier wishes to report a material it considers to be a by-product but is not listed in Annex B, it should ensure appropriate evidence is available to be verified as part of the annual assurance process.

Analysis has indicated that using by-products for biofuels can potentially have significant indirect effects, including on the net lifecycle greenhouse gas emissions biofuels offer. Case studies on the [RFA website](#) give an explanation of these issues.

Chain of custody

To validate the accuracy of C&S reports a chain of custody must be established from the feedstock producer to the fuel supplier. Where an existing standard operates its own certifiable chain of custody this should be used to report the carbon and sustainability

¹³ In the RTFO 'by-products' describes such products as tallow, used cooking oil and molasses (see Annex B for a full listing). The RED does not use such a classification and instead refers to these products as 'wastes' and 'residues'. The implementation of the definition of wastes and residues under the RTFO will be a matter for DfT. As such the RFA intends to continue using the term by-products in the RTFO for Year Four of the RTFO. The approach is intended to be updated for full RED implementation.

Inclusion in the current list of by-products under the RTFO does not guarantee that a feedstock will be classed as a waste or residue after full RED implementation.

information¹⁴. The chain of custody must be specific to the feedstock and standard it represents.

Where the existing assurance scheme does not operate its own chain of custody, or where the chain of custody is broken within the supply chain a 'mass balance' approach should be used. This requires suppliers in 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 feedstock. It ensures that for every unit of sustainable biofuel sold the corresponding sustainable feedstock has been produced.

A 'mass balance approach' requires suppliers throughout the chain to keep input and output records of the feedstock characteristics entering and leaving the plant or process stage¹⁵. The feedstock or fuel sold will have its C&S characteristics described on an invoice or related document. Sustainability information can be allocated freely to each physical consignment of fuel taken out of a site, as long as the 'set of sustainability characteristics' remains together, and the sum of all consignments withdrawn from the site is described as having the same sustainability characteristics, in the same quantities, as the sum of all consignments that entered the site. Where physical consignments are from a single feedstock (e.g. rape), the data must be consistent with that feedstock (i.e. a physical consignment of pure soy oil must have data for soy oil, not for rape). From RED implementation, it appears likely that fuels qualifying for double counting will need to have physical characteristics that are consistent with the sustainability data (i.e. a physical consignment of biofuel will need to be made from a waste or residue to qualify for double counting).

'Equivalence trading' is practiced under the Common Agricultural Policy of the EU under which crops grown under contract for energy use can be substituted by other material from within the EU which has not been grown under an energy contract. However, this

¹⁴ Note that the RED does not currently approve the use of book and claim chain of custody systems (Article 18.1). In January 2011 the EC published a review of chain of custody systems. This report confirms that mass balance is the only chain of custody system currently permitted under the RED. The EC will continue to monitor the situation and report again in 2012. The RFA therefore intends to accept the book and claim system for Year Four of the RTFO, but to disallow book and claim from the time of full RED implementation.

¹⁵ In line with the RED the mass balance approach has to be operated at the level of a site that a company owns or operates, or at a more detailed level of granularity (e.g. tank level). I.e. the RFA does NOT allow companies to operate one single mass balance (units in = units out) approach over their whole global operations. A site is defined as, 'one geographical location with precise boundaries within which products can be mixed'. A site can contain multiple silos or tanks, for example, as long as they are at the same physical location.

practice is in principle a book and claim type chain of custody system, which is not currently permitted under the RED. As such, the RFA intends to permit the continued use of equivalent trading for Year Four of the RTFO, but to disallow it from full RED implementation. A column has been added to the monthly reporting table to flag where equivalence trading has been used. Such biofuels will not count as being RED-Ready.

Verification

The reliability of claims made in Annual C&S Reports must be demonstrated through independent verification (or assurance) and the verifier's report must be submitted to the RFA alongside the supplier's Annual Report. The Annual Reports must be verified by a person who is competent to carry out verification against the International Standard on Assurance Engagements (ISAE 3000), which defines requirements for assurance engagements. The Annual Report and verifier's statement are made publically available.

Guidance on verification can be found in Chapter 6 of this document and the full Guidance for Verifiers can be found [online](#).

The RFA has introduced additional guidance on the information that the assurance report that the obligated party submits to the RTFO Administrator is required to contain. Any report which fails to address all the criteria outlined in the additional guidance will not be accepted as meeting an adequate level of assurance. The guidance can be found in section 6.6 of this document. **Note this guidance is required to be used for Annual C&S Reports from Year Three of the RTFO due in September 2011.**

1 Introduction

This chapter introduces the concepts behind the reporting requirements.

Key changes to this chapter:

- Department for Transport will take over the RFA's duties as the RTFO Administrator.
- Updated information and references to new information published by the European Commission
- Deletion of reference to Chapter 5 on government sustainability targets as these no longer apply.
- New features of the Carbon Calculator.

1.1 The Renewable Transport Fuel Obligation (RTFO)

The UK's Renewable Transport Fuel Obligation (RTFO) commenced on 15 April 2008. It is intended to deliver reductions in carbon dioxide emissions from the road transport sector by encouraging the supply of renewable fuels.

The [RTFO Order \(2007 No. 3072\)](#) [as amended \(2009\)](#) imposes a legal obligation on suppliers of fossil fuel for road transport ('obligated suppliers') to produce Renewable Transport Fuel Certificates (RTFCs) demonstrating that an amount of biofuel has been supplied which is equivalent to a specified percentage of their total fuel sales. The certificates can be earned from the suppliers' own sales of biofuels, or can be acquired from other suppliers of biofuels. Alternatively, obligated suppliers can 'buy out' of their obligation by paying a buy-out price to the RTFO Administrator. Suppliers of renewable transport fuels who are not obligated suppliers are also able to apply for RTFCs. One RTFC is awarded for every litre of biofuel (or kg in the case of biogas).

1.2 Biofuels and the environment

The greenhouse gas (GHG) and sustainability impacts of different biofuels vary significantly. The GHG benefits of biofuels depend, among other things, on the system of cultivation, processing and transportation of feedstock. The production of biofuels can also lead to unintended negative environmental and social impacts. Key issues include potential competition with food crops leading to increased commodity prices. Increased pressure for land may lead directly to deforestation to make way for new plantations with biodiversity impacts and loss of carbon stocks that negate any GHG savings. Changes in land-use may also occur indirectly where existing agricultural activities are displaced into areas of high conservation value by crops for energy.

The Agency's [Gallagher Review](#) concluded that these indirect effects are potentially significant and cannot be ignored if biofuels are to provide a genuinely sustainable part of the suite of measures required to reduce GHG emissions from transport.

The European Commission published a report on indirect land-use change (iLUC) at the end of 2010, which acknowledges it can reduce the GHG savings associated with biofuels and also identifies a number of uncertainties associated with the available models. The Commission will conduct an impact assessment on this issue and take into consideration potential changes to the existing legislation.

The RFA has also published a methodology that can objectively distinguish biofuels from energy crops with a low risk of indirect effects. The methodology aims to enable individual companies to initiate projects which demonstrate that the resultant biofuel has a low risk of causing indirect land-use change. The methodology is included as a voluntary option for suppliers to use. Details are in Annex E. Suppliers are required to report on whether they have initiated such projects in their Annual Report alongside other specified activities to promote sustainable biofuels. Details are in Chapter 4.

Some biofuels production has also been associated with social concerns including labour rights, land conflicts and health concerns related to improper use of agrochemicals. Biofuel demand can also create local economic benefits, however, including employment opportunities.

1.3 Managing concerns about biofuels

Maintaining public confidence in biofuels requires Government regulators and the fuels industry to find effective ways to manage potential negative impacts of their increased demand. Most risks can be managed by suppliers through effective assurance schemes that demonstrate that biofuels are sourced sustainably.

Competition with food and indirect land-use changes need, in large part, to be managed by national governments and international bodies through other policy mechanisms.

Under the [Renewable Transport Fuel Obligation Order](#) it is a pre-condition for issue of a Renewable Transport Fuel Certificate (RTFC) that a carbon and sustainability report is made to the RFA. The reporting requirement has led to more information being made public about the impacts of biofuels and should help consumers to compare the environmental and social benefits of the different biofuels supplied to the market.

1.4 The Renewable Energy Directive

The European [Renewable Energy Directive](#) (RED)¹⁶ sets a target for the UK to achieve 15% of total energy consumption from renewable sources by 2020. As part of this all Member States must achieve a minimum 10% renewable energy in transport. The Fuel Quality Directive (FQD)¹⁷ sets a target for fossil fuel suppliers in all Member States to achieve at least a six percent reduction in life cycle greenhouse gas (GHG) emissions in the fuel they supply by 2020. A significant portion of both of these targets is expected to be met through the provision of biofuels.

The RED and FQD contain a framework for C&S requirements that all biofuel sold in the EU will have to meet to count towards the European targets. The requirements are the same in both Directives and include mandatory aspects as well as reporting requirements, both of which are expected to be implemented in an amended RTFO Order in 2011.

¹⁶ Directive 2009/28/EC of the European Parliament and of the Council of 23 April 2009 on the promotion of the use of energy from renewable sources and amending and subsequently repealing Directives 2001/77/EC and 2003/30/EC

¹⁷ Directive 2009/30/EC of the European Parliament and of the Council of 23 April 2009 amending Directive 98/70/EC as regards the specification of petrol, diesel, and gas-oil and introducing a mechanism to monitor and reduce greenhouse gas emissions and amending Council Directive 1999/32/EC as regards the specification of fuel used by inland waterways vessels and repealing Directive 93/12/EEC

The European Commission (EC) has also published more detail on the C&S requirements:

- Communication from the Commission on voluntary schemes and default values in the EU biofuels and bioliquids sustainability scheme (2010/C 160/01)
- Communication from the Commission on the practical implementation of the EU biofuels and bioliquids sustainability scheme and on counting rules for biofuels (2010/C 160/2)
- Commission Decision on guidelines for the calculation of land carbon stocks for the purpose of Annex V of Directive 2009/28/EC (2010/335/EU)
- Commission Decision on certain types of information about biofuels and bioliquids to be submitted by economic operators to Member States (2011/13/EU)

The guidance laid out here incorporates the guidelines set out in these Decisions and Communications.

1.5 About this document

This document is the updated Technical Guidance for suppliers on the requirements for carbon and sustainability reporting for Year Four of the RTFO, starting on 15 April 2011.

The development of the original document was informed by two separate advisory groups comprising representatives from the oil and biofuel industries as well as from environmental NGOs and other key stakeholders. It was overseen by a steering group comprising representatives from the Department for Transport, the Department for Environment Food and Rural Affairs and the Low Carbon Vehicle Partnership.

The detailed contents of this document derive from two projects by independent consultants to develop:

- a practical methodology for the quantification of the greenhouse gas savings offered by different biofuels; and
- instructions and guidance to enable suppliers both to apply the methodology effectively and to report on the environmental and social aspects of biofuels being supplied to the UK market.

The Renewable Transport Fuel Obligation Order 2007 implemented the RTFO scheme and established the Office of the Renewable Fuels Agency (RFA) to act as the RTFO Administrator. From April 2011 the RFA's duties will be transferred to the Department for Transport (DfT) and the DfT will take over as the RTFO Administrator.

Suppliers who apply for RTFCs have to provide C&S reports to the RTFO Administrator as a pre-condition of certificate issue. However, the information that is reported requires the engagement of the renewable fuel supply chain and therefore several chapters are relevant for other entities involved in the production and distribution of biofuels including agricultural producers, fuel refiners, traders and distributors.

This document is in two parts. Part One sets out the detail of the reporting scheme including how, what and when parties should report; and how information should be passed through the supply chain. High level default values for the carbon intensity of different renewable fuels and benchmarks of voluntary sustainability assurance schemes against the RTFO meta-standard are also provided.

Chapter 2 sets out the basic principles of the GHG intensity calculation and the use of standards in determining sustainability of feedstock production.

Chapter 3 sets out the details of the monthly reporting requirements for suppliers who wish to claim RTFCs.

Chapter 4 sets out who must report on an annual basis and what should be included within the Annual Report.

Chapter 5 sets out how the required information within the supply chain should be passed from one party to another within the supply chain and how a chain of custody should be operated.

Chapter 6 sets out an overview of verification requirements and provides advice on good practice to assist with the verification process.

Annex A to Annex F provide further guidance and detail on sustainability reporting including a list of standards that suppliers may use to report on the sustainability of their renewable fuels, the results of the benchmarks against the RTFO Meta-Standard, a list of feedstocks considered to be by-products, and guidance on developing projects with a low risk of indirect land-use change.

Annex G to Annex I provide the relevant information the RFA requires on the GHG savings of the fuel supplied. High level default values are provided where little is known about the supply chain.

Annex J sets out the current 'known unknowns' for which further information relevant to RED implementation is expected to be published.

Annex K identifies the 'standard terms' to be used for entering data into the RFA's reporting systems.

Part Two of this document – *Carbon reporting - default values and fuel chains* and the accompanying spreadsheets available on the RFA website set out how to carry out calculations to assess the carbon intensity of specific fuels chains. Those parties who have more detailed information on the fuel supply chain, either qualitative information (e.g. the biofuel production facility uses a combined heat and power (CHP) system) or quantitative information (e.g. volume of natural gas used in the conversion plant) can use it to undertake their own calculations rather than rely on the high level defaults provided in this document.

1.5.1 Carbon Calculator

The Carbon Calculator is a free software tool available [online](#) to aid reporting parties determine the GHG emissions from the biofuels they have supplied. The Carbon Calculator contains default values for the carbon emissions associated with all of the fuel chains listed in this Guidance. It also allows fuel suppliers to calculate the carbon saved on a consignment of biofuel by replacing defaults within part or all of the fuel chain with either alternative defaults (e.g. type of fertiliser or mode of feedstock transport) or actual data. The RFA strongly recommends that this tool is used if suppliers are using actual data or changing the RFA defaults within a fuel chain to reduce the potential for errors. Guidance on using the Carbon Calculator is available [online](#).

The Carbon Calculator has been updated to ensure it is compliant with this guidance and is as RED-ready as possible i.e. that it is consistent with the RTFO Administrator's current knowledge of the RED requirements.

Carbon Calculator features:

- Calculate the carbon intensity of your biofuel on a consignment basis as required by the RFA
- Covers all the biofuels and feedstocks listed in the Technical Guidance and will include every default value within the calculations¹⁸

¹⁸ Two default values provided by the Commission could not be replicated (to the nearest whole number) from the input data the Commission has made available. For these two fuels only, waste animal/vegetable oil (for which the default value is used for tallow (except category 3 tallow) and used cooking oil) and waste wood DME. Suppliers will be able to load the default value in the calculator as usual but they will not be able to load the default inputs to achieve that default value. When more information is provided regarding the inputs used to achieve this default value, this will be incorporated into the calculator.

- Automatically updates (via the internet) with the latest RFA defaults and fuel chains
- Generate monthly reports as a csv file that can be uploaded to the RFA website to comply with C&S reporting requirements
- Generate the Annual Report tables required by the RFA (as specified in the Technical Guidance)
- Load a file from, for example, a biofuel producer into the system and retain any information they provide such as data references, consignment numbers etc
- Can be run 'offline' so that all of the user's consignments will be stored on their own PC

Important new features of the calculator for this reporting year include:

- Update of the methodology for reporting emissions from land-use change
- Inclusion of a 'generic module' (for more information on this, please see the carbon calculator manual).
- The possibility to upload regional emissions for cultivation (taken from accepted NUTS2 country reports)
- Inclusion of the grandfathering criteria in reports
- Inclusion of 'RED-ready' flags
- Update of the conservative factor approach
- Changes to the 'accuracy levels'

1.5.2 Guidance for verifiers

In addition, the RFA has produced guidance specifically for verifiers responsible for providing an assurance statement on the Annual Reports individual suppliers are required to produce. This is available [online](#).

1.5.3 Additional documents

Additional sources and documents relevant alongside this Guidance are available [online](#) and comprise:

- a) Sustainability reporting within the RTFO: Framework report. This document, written by Ecofys, describes the principles behind the reporting requirements for environmental and social issues.

- b) Documents providing detailed benchmarks on feedstock standards
- c) Updates and clarifications to the Technical Guidance
- d) Guidance on the interpretation of field audit results for RFA reporting, written by ProForest
- e) Guidance on mitigating indirect impacts of biofuel production: case studies and methodology
- f) Renewable Energy Directive (Directive 2009/28/EC of the European Parliament and of the Council of 23 April 2009 on the promotion of the use of energy from renewable sources and amending and subsequently repealing Directives 2001/77/EC and 2003/30/EC)
- g) Communication from the Commission on voluntary schemes and default values in the EU biofuels and bioliquids sustainability scheme (2010/C 160/01)
- h) Communication from the Commission on the practical implementation of the EU biofuels and bioliquids sustainability scheme and on counting rules for biofuels (2010/C 160/2)
- i) Commission Decision on guidelines for the calculation of land carbon stocks for the purpose of Annex V of Directive 2009/28/EC (2010/335/EU)
- j) Commission Decision on certain types of information about biofuels and bioliquids to be submitted by economic operators to Member States (2011/13/EU)
- k) Fuel Quality Directive (Directive 2009/30/EC of the European Parliament and of the Council of 23 April 2009 amending Directive 98/70/EC as regards the specification of petrol, diesel, and gas-oil and introducing a mechanism to monitor and reduce greenhouse gas emissions and amending Council Directive 1999/32/EC as regards the specification of fuel used by inland waterways vessels and repealing Directive 93/12/EEC)

2 Scope and principles for RTFO C&S reporting

This chapter provides a high level description of the methodology for greenhouse gas calculations and the meta-standard approach for sustainability reporting.

Key changes to this chapter:

Carbon reporting:

- Revised methodology for calculating emissions from direct land use change
- Introduction of the option to use published 'regional' cultivation data in place of 'actual data'
- New definition of 'installation'
- Default input data aligned with BioGrace project
- Removal of the option of requesting the RFA develops default values for new fuel chains has been removed

Sustainability reporting:

- Inclusion of text on EC-recognised voluntary schemes.
- Change of name for two Qualifying Standards: ACCS is now called Red Tractor, BSI is now called Bonsucro.
- Inclusion of updated benchmark results for Bonsucro, RSB and ISCC.

2.1 Greenhouse gas calculation methodology and default values

The GHG calculation methodology is based on a well-to-wheels approach that includes all significant sources of direct GHG emissions. This enables comparison of fuel chain GHG savings on a like for like basis.

Note that biofuels must achieve at least a 35% GHG emissions saving, increasing to at least 50% from 1 January 2017, and 60% from 1 January 2018 for biofuels and bioliquids produced in installations which started production on or after 1 January 2017.

Biofuels produced in installations that were already operational on or before 23 January 2008 do not have to meet the 35% GHG saving threshold until 1 April 2013 (the so-called 'grandfathering clause').

From Year Four, the RTFO Administrator is applying a new definition of the term 'installation' which better follows the intentions of the RED. This new definition makes it clear that *any* processing installation used in the production process should count towards this grandfathering clause. However, production facilities that might have been intentionally added to the production chain specifically to qualify for the exemption foreseen in this provision, will not qualify for this exemption. In addition, if an investment has been made after 23 January 2008 in an existing installation to convert it for the purpose of producing biofuels this installation would not qualify for the exemption.

The methodology defined in the RED (described in detail in Part C of Annex V of the Directive) must be used for all GHG calculations carried out for reporting under the RTFO. The RED methodology completely replaces that used in the first two years of the RTFO.

The carbon intensity reported for a consignment of biofuel can be calculated from actual data, a default value can be used, or a combination of actual data and default inputs can be used.

Default values have been provided for a number of key biofuels. Some of these default values were developed by the European Commission and some were developed by the RFA. Both are accepted by the RTFO Administrator in this pre-RED implementation period but once the RED is implemented the RFA defined default values will no longer be able to be used.

In addition to the high level default values for the fuels, default input data is also provided, which can be used in combination with actual data. See Part Two of the Technical Guidance for rules around which pieces of actual data can be used in isolation and which pieces must be used in combination with another piece. These default inputs are provided in the 'Detailed carbon intensity' workbook which accompanies this guidance. This reporting year inputs have been updated to make sure that they align with the default inputs published by the BioGrace project¹⁹ and made available on the EU transparency platform. Two default values provided by the Commission could not be replicated (to the nearest whole number) by the RFA or BioGrace project from the input data the Commission has made available. For these two fuels only,

¹⁹ The RFA in the UK and the [Biograce project](#) in the EU have developed a breakdown of the RED disaggregated defaults into their component input data.

UCO/tallow (excluding category 3 tallow) and waste wood DME, suppliers can continue to use the default value but until more information is provided regarding the inputs used to achieve this default value, the input data will not be provided in the detailed carbon intensity data that accompanies this guidance.

Commission defined default values are available for:

- Bioethanol, ETBE²⁰ and TAE²¹ from sugar beet, sugar cane, wheat and European Community produced corn (natural gas as process fuel in CHP plant).
- FAME²² biodiesel from oilseed rape, palm, soy beans, sunflower, UCO and tallow (excluding category 3)²³;
- Hydrotreated biodiesel (dedicated processing only, not co-processed) from oilseed rape, palm, sunflower;
- Biogas (as CNG²⁴) from dry manure, wet manure and municipal organic waste;
- Pure plant oil from oilseed rape.

Note: Annex V of the RED also includes default values for several 'future biofuels' (see Part B of Annex V).

In order for non-waste biofuels produced in the EU to be deemed 'RED-ready', they must comply with a particular rule regarding the emissions from feedstock cultivation. These rules state that if the biofuel feedstock was produced in the European Union, the disaggregated default value for the cultivation stage (and therefore the overall default value) can only be used if the feedstock was cultivated in a NUTS2 region which has been shown to have feedstock cultivation emissions lower or equal to that disaggregated default value. If the NUTS2 region has higher cultivation emissions than the default, actual values must be used in the calculation of the cultivation emissions. Member States' reports including lists of 'RED-compliant NUTS2 regions' per feedstock can be found on the European Commission transparency platform. It should be noted that the RED makes a provision for

²⁰ Ethyl tertiary butyl ether

²¹ Tertiary amyl ethyl ether

²² Fatty acid methyl ester

²³ UCO and tallow (excluding category 3 tallow) use the EC default value for 'waste vegetable and animal oil'. The RED specifically excludes the use of this default value for category 3 tallow. In this pre-RED implementation period, it is possible to use the previously defined RFA default value for tallow for category 3 tallow. If the tallow category is unknown, the RFA default value may also be used. If the tallow is uncategorised (e.g. from outside the EU), the EC default value can be used.

²⁴ Compressed natural gas

‘regional’ cultivation data to be used in place of actual data. Although it has not been explicitly noted in the RED, the RTFO Administrator interprets this to mean that the total NUTS2 level cultivation emissions reported by Member States and accepted by the European Commission can be used as regional cultivation emission averages instead of actual values. Suppliers may use the accepted NUTS2 level cultivation emissions regardless of whether they are higher or lower than the disaggregated default published by the Commission for the cultivation step.

RFA defined default values (not accepted post-RED implementation²⁵) are available for:

- Bioethanol, ETBE and TAAE from: EC produced corn (process not specified), non-EC corn, corn (unknown origin), barley, cassava, molasses, spent sulphite liquor, sweet sorghum and triticale.
- FAME biodiesel from: coconut, corn oil, jatropha and tallow (category 3 or unknown category).
- Hydrotreated biodiesel (dedicated processing only, not co-processed): coconut, soy, jatropha.
- Co-processed biodiesel from: coconut, jatropha, oilseed rape, palm, soy, sunflower and tallow (category 3 or unknown category).
- Pure plant oil from soy.

NOTE: At the time of writing, the European Commission has not specified how default values will be developed for new fuel chains. Parties should contact the Commission directly with any requests for the development of new default values. Suppliers may also contact the RTFO Administrator to put forward requests to the Commission for new default values on their behalf.

In addition to using a default value, suppliers who have access to specific information about their supply chain can use qualitative or quantitative data to improve the accuracy of the calculation. Part 2 of this Technical Guidance outlines procedures for using this data. There is a software tool for fuel suppliers called the [Carbon Calculator](#) which can help prepare monthly reports to the RTFO Administrator, as well as the aggregate data tables for inclusion in suppliers Annual Reports to the RTFO Administrator. This tool can also help calculate carbon intensity values using actual data for fuel chains.

²⁵ If these RFA defined default values are used, the fuel will not be considered ‘RED-ready’ because they cannot be used post RED implementation.

If a default value is not available, suppliers must use actual data for all inputs of the chain to calculate the carbon intensity of their fuel. Alternatively they may use the fuel level default value. Note that the latter of these options will not be permitted post-RED implementation. The 'use of actual data for the whole chain' requires inclusion of all sources of GHG emissions that are likely to contribute more than one percent of the anticipated lifecycle GHG emissions associated with the biofuel²⁶.

2.2 Land-use change

Where information on previous land use is supplied, the carbon intensity value reported must include the GHG impact of the land-use change. Previously, default values for different land use changes were provided by the RFA. However, last year, the Commission published a Decision on the methodology for calculating land carbon stocks. This new methodology is explained in Annex H.

Where information is not provided on land-use on 1 January 2008 (i.e. 'unknown' is reported) the fuel chain default value excluding land-use change can be reported. Note: when the RED is fully implemented into the RTFO, information on land-use on 1 January 2008 will be mandatory, i.e. 'unknown' reporting will no longer be permissible.

2.3 Sustainability reporting

The principal environmental and social risks arising from biofuel production (such as deforestation and loss of biodiversity) arise at the plantation. The sustainability reporting therefore focuses on this part of the supply chain.

The RTFO sustainability reporting approach makes use of existing voluntary agri-environment and social accountability schemes (also referred to as 'voluntary schemes') to minimise the cost and administrative burden of compliance. These existing schemes have been benchmarked against the RTFO Biofuel Sustainability Meta-Standard. The Meta-Standard comprises seven principles identified in Table 1 and includes a number of criteria and indicators (as set

²⁶ An initial estimate of GHG emissions associated with an input can be calculated using a proxy to work out the likely magnitude of the GHG emissions of a particular input to understand whether it is likely to contribute >1% of the overall lifecycle GHG emissions of the biofuel.

out in Annex C) to assess the extent to which the feedstock produced in accordance with each scheme can be considered sustainable.

Table 1 Environmental and social principles

Environmental principles
1. Biomass production will not destroy or damage large above or below ground carbon stocks
2. Biomass production will not lead to the destruction or damage to high biodiversity areas
3. Biomass production does not lead to soil degradation
4. Biomass production does not lead to the contamination or depletion of water sources
5. Biomass production does not lead to air pollution
Social principles
6. Biomass production does not adversely affect workers rights and working relationships
7. Biomass production does not adversely affect existing land rights and community relations

The RFA also monitors the wider environmental and social principles that are not within the control of the supply chain, including indirect land-use change and competition with food prices and separately report on these. The RFA publishes information on these potential effects as part of its [Annual Report](#) to Parliament.

The RFA also commissioned work to develop a methodology that can objectively distinguish biofuels from energy crops with a low risk of indirect effects. The methodology aims to enable individual companies to initiate projects that can demonstrate that the resultant biofuel has a low risk of causing indirect land-use change. The methodology is included as an option for suppliers to use. Details are in Annex E. Suppliers are required to report on whether they have initiated such projects as well as other specified activities to support sustainable biofuels in their Annual Report. Details are in Chapter 4 of this guidance.

The RED sets mandatory minimum sustainability requirements on the following elements:

- **Biodiversity (Article 17.3):** Biofuels may not be made from raw material obtained from land with **high biodiversity value** in or after January 2008. (Further detail is expected from the EC on the definition of highly biodiverse grassland.)
- **Carbon stock and peatlands (Article 17.4 and 17.5):** Biofuels may not be made from raw material obtained from land with **high carbon stock** or land that was undrained peatland in or after January 2008.
- **Cross compliance (Article 17.6):** Biofuel feedstocks grown in the European Community must be cultivated according to the EC's 'Cross Compliance' requirements (part A and point 9 of Annex II to Council Regulation (EC) No 73/2009 of 19 January 2009).

The EC will undertake formal assessments of voluntary schemes that apply to them to judge whether they deem the schemes appropriate to demonstrate compliance with the RED sustainability requirements, including the GHG and land-use criteria (biodiversity, carbon stocks and peatlands), the chain of custody and audit quality requirements²⁷. The RFA understands that voluntary schemes will be recognised by the EC for a specific scope, e.g. certain feedstocks, geographies, one or more of the land-use criteria, the GHG criterion and the possibility to calculate actual values, and/or the mass balance.

Those voluntary schemes that are recognised by the EC will automatically be recognised in the RTFO, for the same scope recognised by the EC. EC-recognised schemes are able to be used to demonstrate 'RED-Ready' biofuel in Year Four of the RTFO. At the time of writing no voluntary schemes have been recognised by the EC, although a number are known to have applied for recognition. (The process for inclusion of EC-recognised voluntary schemes in the RTFO is set out in Annex A.)

Since the start of the RTFO, the RFA has benchmarked a comprehensive range of existing sustainability standards and certification schemes²⁸ against the RTFO Meta-Standard, as

²⁷ The RED also permits the use of recognised bilateral or multilateral agreements concluded by the European Union with third countries to demonstrate compliance with sustainability requirements. At the time of writing the RFA are not aware of any bilateral or multilateral agreements under discussion with the EC. However, should any agreements be announced, the RTFO Administrator would look to include this as a reporting option for economic operators in an appropriate manner.

²⁸ Note a 'standard' is a document that sets out system and/or performance norms (in this case sustainability principles and criteria). In many cases a standard is a key component of a broader certification scheme. A 'voluntary scheme' or 'certification scheme' typically includes a standard, a mechanism for certification and an ...

illustrated in Table 2. Benchmarked standards that meet the required level of sustainability are called Qualifying Standards. Some benchmarked standards meet the full RTFO Social Meta-Standard, but none currently fully meet the RTFO Environmental Meta-Standard, or the full RTFO Biofuel Sustainability Meta-Standard.

Suppliers are able to report compliance with any standard that has been benchmarked against the RTFO Meta-Standard in Table 2.

Qualifying Standards meet most, but not all, of the RTFO Biofuel Sustainability Meta-Standard criteria (the full criteria are described in Annex C). The criteria which are not fully met by a Qualifying Standard are called 'gap criteria'. Suppliers are able to provide evidence of additional supplementary checks against these gap criteria to demonstrate that feedstock complies with all the Meta-Standard criteria and therefore meet the highest sustainability level.

The RFA has also benchmarked existing Environmental Qualifying Standards against the Renewable Energy Directive wording of the mandatory criteria. Note: These benchmarks were conducted for indicative purposes before all details of the RED and Communications were published and therefore do not guarantee that these voluntary schemes will pass assessment by the EC.

The existing Environmental Qualifying Standards in general show a good coverage of the current wording of the biodiversity criterion (see Table 2)²⁹. Reporting an Environmental Qualifying Standard that covers the RED biodiversity criterion or the full RTFO Meta-Standard can be used to demonstrate RED-readiness against the biodiversity criterion.

The RFA also intends to allow independent audit against the EC biodiversity criterion itself (RED Biodiversity Audit). This will only become possible once further details are made available by the EC.

Existing Environmental Qualifying Standards do not currently show a good coverage of the EC carbon stock criterion. Reporting against

accreditation system. The RFA has benchmarked both sustainability standards (e.g. Basel criteria) and certification schemes (e.g. RSPO).

Unless specified otherwise, the term sustainability standard as used in this Technical Guidance refers to both standards and certification schemes which have been benchmarked by the RFA.

²⁹ Note that a benchmark of non-Qualifying Standards showed that none of these currently cover both the RED biodiversity criterion and meet the norm for audit quality.

the carbon stock criterion is enabled mainly through the previous land use column of the monthly reports (see Annex H), but can also be met by reporting an Environmental Qualifying Standard that covers the RED carbon criterion or by reporting the full RTFO Meta-Standard.

In the interests of consistency in the UK, the RTFO Administrator will engage with Ofgem on voluntary schemes used under the Renewables Obligation sustainability requirements for bioliquids use for electricity generation.

Those benchmarked standards that do not meet the Qualifying Standard level can still be reported, but the biofuel will not count as meeting the Qualifying Standard level or as being RED-Ready. The standards to which this applies are shown in Table 2.

To minimise the burden on business the RFA does not currently require suppliers to report on criteria from by-products where the risk of adverse direct sustainability impacts has been thought to be minimal. An objective, risk-based metric has been used to develop this principle. Where a feedstock represents less than 10% of the farm or factory gate value it is considered a by-product (see Annex A).

The RFA has published a [report](#) on a methodology for quantifying the indirect greenhouse gas impacts of using 'wastes' for biofuels or bioenergy, which includes case studies of UK tallow, MSW, straw and molasses.

In line with the RED all by-products³⁰ shall be attributed with zero GHG emissions at the point at which they are collected for processing into biofuels (see Paragraph 18 of Annex V).

³⁰ In the RTFO 'by-products' describes such products as tallow, used cooking oil and molasses (see Annex B for a full listing). The RED does not use such a classification and instead refers to these types of products as 'wastes' and 'residues'. The implementation of the definition of wastes and residues under the RTFO will be a matter for DfT. As such the RFA intends to continue using the term by-products in the RTFO for Year Four of the RTFO. The approach is intended to be updated for full RED implementation.

Table 2 Benchmarked standards

The table illustrates whether the standard is an environmental or social Qualifying Standard, and whether the standard meets the RED criteria on biodiversity and carbon stocks. **N.B. some standards have developed additional *optional* criteria for RED/EU market access which affect 'RED-readiness'. Suppliers need to determine whether these optional criteria were met to claim the 'incl. RED criteria' version.** See Annex A for further details. Schemes marked with '*' have been benchmarked by the European Commission.

Benchmarked standard	Indicative RED Biodiversity Criterion?	Indicative RED Carbon Stocks Criterion?	RTFO Environmental. Meta-Standard?	RTFO Social Meta-Standard?	Qualifying Environmental Standard?	Qualifying Social Standard?	Meets norm for audit quality?
Standards that meet Qualifying Standard level or RED sustainability criteria							
Abengoa RED Bioenergy Sustainability Assurance *	Yes	Yes	-	-	-	-	-
Biomass Biofuels voluntary scheme *	Yes	Yes	-	-	-	-	-
Bonsucro (formerly Better Sugar Cane Initiative, BSI)	-	-	No	No	No	Yes	Yes
Bonsucro (formerly Better Sugar Cane Initiative, BSI) incl. RED criteria *	Yes	Yes	No	No	No	Yes	Yes
Forest Stewardship Council (FSC)	No	No	No	No	Yes	No	Yes
Genesis Quality Assurance (Genesis QA)	Yes	No	No	No	Yes	No	Yes
Greenenergy Brazilian Bioethanol ver. prog. *	Yes	Yes	-	-	-	-	-
International Sustainability and Carbon Certification (ISCC) *	Yes	Yes	No	No	No	No	No
Linking Environment And Farming Marque (LEAF)	No	No	No	No	Yes	No	Yes
Red Tractor (formerly Assured Combinable Crops Scheme, ACCS)	Yes	No	No	No	Yes	No	Yes
Round Table on Responsible Soy (RTRS)	No	No	No	Yes	Yes	Yes	-

Benchmarked standard	Indicative RED Biodiversity. Criterion?	Indicative RED Carbon Stocks Criterion?	RTFO Environmental. Meta-Standard?	RTFO Social Meta-Standard?	Qualifying Environmental Standard?	Qualifying Social Standard?	Meets norm for audit quality?
Round Table on Responsible Soy EU RED (RTRS) *	Yes	Yes	No	Yes	Yes	Yes	-
Roundtable on Sustainable Biofuels	-	-	No	No	Yes	Yes	Yes
Roundtable on Sustainable Biofuels incl. RED criteria *	Yes	Yes	No	No	Yes	Yes	Yes
Roundtable on Sustainable Palm Oil (RSPO)	Yes	No	No	No	Yes	Yes	Yes
Roundtable on Sustainable Palm Oil (RSPO) – GreenPalm	No	No	No	No	Yes	Yes	Yes
Sustainable Agriculture Network/Rainforest Alliance (SAN/RA)	Yes	No	No	No	Yes	Yes	Yes
Standards that do not meet Qualifying Standard level							
Basel criteria for soy (Basel)	-	-	No	No	Yes	Yes	-
FEDIOL	-	-	No	No	No	No	-
Qualität und Sicherheit (QuS)	-	-	No	No	No	No	-
GlobalGAP	-	-	No	No	No	No	-
International Federation of Organic Agriculture Movements (IFOAM)	-	-	No	No	No	No	-
ProTerra	-	-	No	No	No	No	-
Scottish Quality Crops (SQC)	-	-	No	No	No	No	Yes
Social Accountability 8000 (SA8000)	-	-	No	No	No	No	No

3 Monthly reporting

This chapter sets out the requirements for monthly C&S reporting by fuel suppliers to the RTFO Administrator. It illustrates the format for monthly reporting and describes how monthly reporting relates to the issuing of RTFCs.

For simplicity, the C&S reports included in an application for RTFCs are referred to as 'monthly' reports throughout this chapter to distinguish them from Annual Reports.

Some of the sustainability data requirements are not applicable to certain feedstocks: recommended instructions are provided on reporting in these cases.

This chapter is likely to be of particular interest to obligated suppliers and any other fuel suppliers who wish to claim RTFCs.

Key changes to this chapter:

- Addition of 'equivalence trading' to the 'set of sustainability characteristics' and to monthly reporting format.
- Change of name for two Qualifying Standards: ACCS is now called Red Tractor, BSI is now called Bonsucro.
- Addition of EC-recognised voluntary schemes to demonstrate RED-readiness.
- Accuracy levels – changes in purpose and numbering

3.1 Reporting frequency and timetable

C&S reports are required as part of any application for certificates. Monthly reports must be submitted to the RTFO Administrator in the month after the month in which the duty payment on the fuel was reported to HM Revenue and Customs.

3.2 What to report

C&S reports on biofuels must be per 'administrative consignment', where a consignment is any amount of product with an identical 'set of sustainability characteristics' which are:

- Fuel type

- Biofuel feedstock
- Process by which the biofuel was produced (if applicable)
- Country of origin
- (If EU feedstock) whether feedstock is from NUTS2 compliant region
- Standard(s) (including supplementary checks where these have been performed)
- Land-use on 1 January 2008
- Plant in operation on 23 January 2008
- Use of equivalence trading
- Carbon intensity*

The **total volume of the consignments in a C&S report should equal the volume of fuel reported in the application for certificates** i.e. the volume of renewable fuel supplied in the period.

*Consignments with different carbon intensities can be aggregated for reporting purposes if all of the other criteria above are identical and as long as **aggregation does not enable consignments that would not have met the minimum GHG emission threshold to lower their average carbon intensity and then meet the threshold**. The overall carbon intensity for aggregated consignments compliant with this rule is given by calculating a weighted average (by volume) of all the carbon intensities of the different consignments.

Biofuel sourced from a plant in operation on 23 January 2008 i.e. 'grandfathered' fuel may be aggregated with non-grandfathered fuel but it cannot be claimed that the overall consignment is 'grandfathered'.

The RFA requires a C&S report for every application for an RTFC, and will not issue RTFCs where no such report has been provided.

3.3 Reporting on the sustainability of renewable fuels

The reporting scheme aims to make maximum use of existing voluntary agri-environmental and social accountability schemes. It therefore encourages transport fuel suppliers to demonstrate that their biofuel feedstock is produced in accordance with the criteria of the RTFO Biofuel Sustainability Meta-Standard, through certification

where possible to an existing accountability scheme, such as the Red Tractor Scheme (formerly called ACCS).

Through a benchmarking process that compares existing schemes against the Meta-Standard; two different levels of feedstock sustainability for the RTFO have been defined. Existing accountability schemes have been classified as meeting either:

- The 'Qualifying Standard' for social and/or environmental criteria - representing an acceptable level of sustainability; or
- The 'RTFO Biofuel Sustainability Meta-Standard' - representing a higher level of sustainability - by meeting fully the requirements of the RTFO Biofuel Sustainability Meta-Standard.

The RFA has also benchmarked existing Environmental Qualifying Standards against the RED wording of the mandatory biodiversity and carbon stock criterion. Reporting an Environmental Qualifying Standard that covers the RED biodiversity criterion, the full RTFO Meta-Standard, or a RED Biodiversity Audit³¹ can be used to demonstrate RED-readiness on the biodiversity criterion.

Existing Environmental Qualifying Standards do not show a good coverage of the EC carbon stock criterion. Reporting against the carbon stock criterion is enabled mainly through the previous land use column of the monthly reports (see Annex H), but can also be met by reporting an Environmental Qualifying Standard that covers the RED carbon criterion or by reporting the full RTFO Meta-Standard.

Transport fuel suppliers are able to report that their feedstock meets an accountability scheme that does not achieve these levels of performance, provided it has been benchmarked against the Meta-Standard and is listed in Table 2 or Annex A.

3.3.1 The Qualifying Standard

What is it?

Existing standards which meet most, but not all, of the RTFO sustainability criteria underlying the principles outlined in Chapter 2 are accepted as proof of an acceptable level of sustainability. These standards are called Qualifying Standards.

³¹ It is intended to allow a specific independent audit against the RED biodiversity criterion. However, insufficient detail is currently available from the RED to enable this option.

The RTFO Biofuel Sustainability Meta-Standard criteria which are not fully met by a Qualifying Standard are called 'gap criteria'. The number of criteria that an existing standard must address to be accepted as a Qualifying Standard is described in Annex A.

Several existing standards only address either environmental issues or social issues. Therefore the Qualifying Standard is defined separately for environmental and social criteria. If the existing standard sufficiently addresses both environmental and social criteria it can be an environmental Qualifying Standard and a social Qualifying Standard.

Current standards which meet at least the Qualifying Environmental Standard level are:

- Forest Stewardship Council (FSC)
- Genesis Quality Assurance (Genesis QA)
- Linking Environment and Farming (LEAF)
- Red Tractor (formerly Assured Combinable Crops Scheme, ACCS)
- Roundtable for Sustainable Biofuels (RSB)
- Roundtable on Sustainable Palm Oil (RSPO)
- Round Table on Responsible Soy (RTRS)
- Sustainable Agriculture Network/Rainforest Alliance (SAN/RA)³²

Current standards which meet at least the Qualifying Social Standard level are:

- Bonsucro (formerly Better Sugar Cane Initiative, BSI)
- Roundtable for Sustainable Biofuels (RSB)
- Roundtable on Sustainable Palm Oil (RSPO)
- Round Table on Responsible Soy (RTRS)
- Sustainable Agriculture Network/Rainforest Alliance (SAN/RA)

For further details on all the standards that have been benchmarked and can be reported see Annex A.

³² Note that this benchmark result refers to the SAN standard and its addendum, which were published in April 2009. The addendum includes additional sustainability criteria for a number of key biofuel feedstocks (sugar cane, oil palm, soy and sunflower).

How to claim a Qualifying Standard

There are three methods a party can use to demonstrate compliance with the Qualifying Standard level:

- a) Using an existing Qualifying Standard;
- b) Using a non-Qualifying Standard with evidence of successful independent audit against gap criteria; or
- c) Successful independent audit against the full RTFO Meta-Standard, in which it is found that the farm/plantation meets the Qualifying Standard level³³.

For a biofuel supplier to claim that its feedstock was grown in accordance with a Qualifying Standard that is an operational certification scheme, it must be able to show that the farm from which the feedstock originates has a certificate which proves that it is certified to the Qualifying Standard level. In the case where the Qualifying Standard operates a book and claim system with tradable certificates (which has been approved for use by the RFA), the biofuel supplier must be able to show sufficient of the relevant certificates for the amount of biofuel claimed. For more details, see Chapter 5 on the chain of custody³⁴.

If the Qualifying Standard is an operational standard with no associated certification scheme, companies must provide evidence of a successful third party independent audit against the standard's criteria. The audit must meet the requirements of the RFA's Norm for Audit Quality (see section A.5 in Annex A), with the exception of criteria 2 (Management of the audit programme) and 7 (Accreditation process for Accreditation Bodies). Minor musts in the norm should be treated as recommendations only.

It is also permissible to report that a feedstock was grown to a Qualifying Standard level if a non-Qualifying Standard (from those listed in Table 2) is complemented by supplementary checks on the 'gap criteria' which show that the farm meets the Qualifying Standard level. In this case proof must be provided of certification against the non-Qualifying Standard in addition to documented

³³ See [Guidance](#) on the interpretation of field audit results for RFA reporting, written by ProForest.

³⁴ Note that the RED does not currently approve the use of a book and claim chain of custody system (Article 18.1). In January 2011 the EC published a review of chain of custody systems. This report confirms that mass balance is the only chain of custody system currently permitted under the RED. The EC will continue to monitor the situation and report again in 2012. The RFA therefore intends to accept the book and claim system for Year Four of the RTFO, but to disallow book-and-claim from the time of full RED implementation.

proof of a successful audit against the gap criteria as they relate to the Qualifying Standard claimed. In this case, both certification against the existing standard and the supplementary checks must meet the RFA's Norm for Audit Quality (see section A.5 in Annex A), with the exceptions listed above. Minor musts in the norm should be treated as recommendations only.

The RFA **strongly recommends** that in cases where an existing Qualifying Standard is operational, parties do not look to carry out independent audits against the RTFO Biofuel Sustainability Meta-Standard (option c).

For situations where there is no operational Qualifying Standard, or standards are still under development, a short term solution is recommended for sustainability reporting under the RTFO. This is described in Annex A.

3.3.2 The RTFO Biofuel Sustainability Meta-Standard

What is it?

The RTFO Biofuel Sustainability Meta-Standard sets out the aim for sustainability performance under the RTFO in the medium term. It comprises five environmental and two social principles which are set out in Table 1. These are sub-divided into a number of criteria and indicators which are set out in Annex C.

A number of voluntary sustainability standards have been benchmarked against the RTFO Meta-Standard. Currently, no existing standards meet the full RTFO Meta-Standard for the environmental criteria. One standard meets the full RTFO Meta-Standard for social criteria. It is anticipated that, where available, companies will focus on using the mechanisms developed by existing sustainability assurance schemes and will primarily aim to report a Qualifying Standard. It is hoped that existing Qualifying Standards and non-Qualifying Standards will address the gap criteria within their standard (e.g. by establishing a reference year for land-use change) and will thereby develop towards full equivalence with the RTFO Biofuel Sustainability Meta-Standard.

The standard which meets the full RTFO Social Meta-Standard level is:

- Round Table on Responsible Soy (RTRS)

For further details on all the standards that have been benchmarked and can be reported see Annex A.

How to claim the RTFO Biofuel Sustainability Meta-Standard

It is recognised that the RTFO Biofuel Sustainability Meta-Standard level is currently not available for a wide range of biofuel feedstocks. However, there are four alternative methods a party can use to demonstrate compliance with the full RTFO Biofuel Sustainability Meta-Standard:

- a) Using a standard that meets the full RTFO Meta-Standard;
- b) Using an existing Qualifying Standard with evidence of successful independent audit against gap criteria to reach full RTFO Meta-Standard level;
- c) Using a non-Qualifying Standard with evidence of successful independent audit against gap criteria to reach full RTFO Meta-Standard level; or
- d) Successful independent audit against the full RTFO Meta-Standard³⁵.

In the same way as claiming an existing Qualifying Standard above, a party can provide evidence of certification against an existing operational sustainability certification scheme which meets the full RTFO Meta-Standard.

A party can alternatively provide proof of certification against one of the Qualifying Standards listed in Table 2, and proof of a successful audit against the gap criteria between the Qualifying Standard reported and the RTFO Meta-Standard level.

In such cases, supplementary checks must be performed by a body which is accredited to the Qualifying Standard and with qualifications relevant to the gap criteria.

Parties may also provide proof of certification against one of the benchmarked standards that does not meet a Qualifying Standard level, listed in Table 2, and proof of a successful audit against the gap criteria between the benchmarked standard reported and the RTFO Meta-Standard level. In this case, both certification against the existing standard and the supplementary checks must meet the requirements of the Norm for Audit Quality (see section A.5 in Annex A), with the exception of criteria 2 (Management of the audit programme) and 7 (Accreditation process for Accreditation Bodies).

³⁵ See [Guidance](#) on the interpretation of field audit results for RFA reporting, written by Proforest. Suppliers are asked to inform the RTFO Administrator of any interpretations made of the RTFO Meta-Standard, for the purpose of demonstrating compliance under the RTFO.

Minor musts in the norm should be treated as recommendations only.

Parties may also carry out an independent third party audit against the full RTFO Biofuel Sustainability Meta-Standard criteria, in which the requirements of the RFA's Norm for Audit Quality (see section A.5 in Annex A) are met, with exceptions as listed above. Minor musts in the norm should be treated as recommendations only.

The RFA **strongly recommends** that in cases where an existing standard which meets the full RTFO Meta-Standard level or the Qualifying Standard is operational, parties do not look to carry out independent audits against the RTFO Biofuel Sustainability Meta-Standard (option d).

3.3.3 How are biofuels produced from by-products treated?³⁶

For by-products such as manure and tallow, data on sustainability standard and land-use of the by-product are not required. Annex A sets out the list of those considered by-products for RTFO C&S reporting.

In a monthly report, suppliers are required to complete the general consignment information columns with information on biofuel feedstock and country of origin, and to report 'by-product' for the sustainability information columns. Reporting the carbon intensity of the biofuel is still required and can be derived using the default values in Annex G or calculated using Part Two of this document.

Reporting 'by-product' in the relevant fields achieves both the Environmental and Social Qualifying Standard level.

3.3.4 The Renewable Energy Directive

What are the requirements?

The RED and FQD will set mandatory minimum requirements on the following elements:

³⁶ Note that under the RED wastes and residues, are set to be 'double counted' towards Member States' renewable transport targets. This implies that one litre of biofuel produced from the above by products may earn two RTFCs when the RED is implemented into UK law. The implementation of the definition of wastes and residues under the RTFO will be a matter for DfT and is intended to be updated from full RED implementation. **Inclusion in the current list of by-products under the RTFO does not guarantee that a feedstock will be classed as a waste or residue after full RED implementation.**

- **GHG emissions savings (Article 17.2):** Biofuels must achieve at least a 35% GHG emissions saving, increasing to at least 50% from 1 January 2017, and 60% from 1 January 2018 for biofuels and bioliquids produced in installations which started production on or after 1 January 2017. Biofuels produced in installations³⁷ that were already operational on 23 January 2008 do not have to meet the 35% GHG saving threshold until 1 April 2013.
- **NUTS2³⁸ (Article 19.3):** for EU feedstocks, parties are only allowed to use the RED GHG default values if the feedstock is from a region where the typical GHG emissions from cultivation of agricultural raw materials can be expected to be lower than or equal to the emissions in the default value. Regions are defined at the 'NUTS2' level. Member State reports on emissions from cultivation are published on the EC Transparency Platform.³⁹ Once analysed by the EC, data from these reports is included in the Carbon Calculator – new data can be used as soon as it is available whilst changes to existing NUTS2 data will apply from the next obligation period. Actual data on cultivation emissions is required in the case that a NUTS2 region has typically higher emissions than those in the default value.
- **Biodiversity (Article 17.3):** Biofuels may not be made from raw material obtained from land with **high biodiversity value** in or after January 2008. (Further detail is expected from the EC on the definition of highly biodiverse grassland.)
- **Carbon stock and peatlands (Article 17.4 and 17.5):** Biofuels may not be made from raw material obtained from land with **high carbon stock** or land that was undrained peatland in or after January 2008.
- **Cross compliance (Article 17.6):** Biofuel feedstocks grown in the European Community must be cultivated according to the EC's 'Cross Compliance' requirements (part A and point 9 of Annex II to [Council Regulation \(EC\) No 73/2009](#) of 19 January 2009).

How to claim RED-readiness

Since 15 April 2010 obligated parties have been able to report biofuels as being RED-ready. Note: as there are still some

³⁷ See section 2.1 for the updated definition of the term 'installation'.

³⁸ Nomenclature of territorial units for statistics, level-2:
http://epp.eurostat.ec.europa.eu/portal/page/portal/nuts_nomenclature/introduction

³⁹ Member State reports on Emissions from cultivation as required by Article 19.2:
http://ec.europa.eu/energy/renewables/transparency_platform/emissions_en.htm

uncertainties as to how some aspects of the RED will be implemented into the RTFO Order, biofuels cannot yet be claimed to be RED compliant and the term 'RED-ready' is used instead. During the RED-ready period, all reported biofuels will still be eligible to earn RTFCs.

A party can demonstrate RED-readiness if they meet all three of the following elements:

a) GHG threshold:

- Reporting a carbon intensity of 54.47 gCO₂e/MJ or less (equivalent to a minimum 35% GHG emission saving); or
- Reporting that the biofuel was produced by an installation that was already operational on 23 January 2008⁴⁰.
- Note on NUTS2: For EU feedstocks, parties may also report whether the feedstock is from a NUTS2 compliant region or not. When the RED is implemented, EU biofuels not from a NUTS2 compliant region will not be allowed to use a carbon default value and will have to report actual carbon values for the cultivation stage⁴¹.
- During the RED-ready period the RFA will continue to allow parties to report default carbon values.
- At present, not all EU NUTS2 regions have a compliance status that is accepted by the Commission. As soon as the Commission accepts a NUTS2 region as either compliant or non-compliant, that decision can be used to decide whether a consignment of biofuel is 'RED-ready' or not. For example, if a fuel supplier uses a default value for a consignment of biofuel from a non-compliant NUTS2 region, the consignment will not be RED-ready.

b) Biodiversity:

- Reporting a Qualifying Environmental Standard or a scheme recognised by the European Commission that covers the RED biodiversity criterion (see Table 2); or
- Reporting a benchmarked non-Qualifying Standard that covers the RED biodiversity criterion⁴²; or

⁴⁰ See section 2.1 for the updated definition of the term 'installation'.

⁴¹ When the RED is implemented, EU biofuels wishing to use the GHG defaults will therefore be required to provide evidence that their feedstock is from a NUTS2 compliant region. The RFA will not require NUTS2 information for EU biofuels using actual carbon data. The RFA has no intention of reporting NUTS2 regional information for individual suppliers.

⁴² Currently there are no such standards that the RFA has benchmarked.

- Reporting the RTFO Environmental Meta-Standard level; or
- Independent audit against the RED biodiversity criterion⁴³; or
- Reporting 'cropland – non-protected' as the land-use on 1 January 2008; or
- Reporting 'cropland – protected - no change in status'.

c) Carbon stock and peatlands:

- Reporting a Qualifying Environmental Standard or a scheme recognised by the European Commission that covers the RED carbon stock criteria (see Table 2); or
- Reporting a benchmarked non-Qualifying Standard that covers the RED carbon stock criteria⁴⁴; or
- Reporting a land-use on 1 January 2008 that does not have a high carbon stock ('cropland – non-protected', 'cropland – protected', 'cropland – protected – no change in status', 'grassland with agricultural use' or 'grassland without agricultural use') or 'by-product'⁴⁵.
- Note: reporting 'unknown' will not meet this criterion.
- Note that the RED carbon stock criterion does not apply if the land has the same status now as it did on 1 January 2008.

Note that the European Commission has not yet published details on how biofuels should demonstrate compliance with the Cross Compliance criterion. As such the RFA do not intend to require information related to this at this stage.

EC-recognised voluntary schemes

A party can also demonstrate RED-readiness with one of all of the above criteria by using an EC-recognised voluntary scheme. Voluntary schemes will be recognised by the EC for a specific scope, e.g. one or more of the land-use criteria, the GHG criterion and the possibility to calculate actual values, and/or the mass balance chain of custody.

Those voluntary schemes that are recognised by the EC can be reported under the RTFO (in the 'Standard' column) to demonstrate RED-readiness for the scope for which the scheme is recognised, subject to parties in the supply chain being audited against the

⁴³ It is intended to allow a specific independent audit against the RED biodiversity criterion. However, insufficient detail is currently available from the RED to enable this option.

⁴⁴ Currently there are no such standards that the RFA has benchmarked.

⁴⁵ Land-use type definitions are provided in Table 32 in Annex H.

version of the voluntary scheme that the EC recognises. (See Annex A for the process for inclusion of EC-recognised voluntary schemes in the RTFO.)

3.4 Filling in the monthly report

Table 3 and the following text provide a summary of the information that is required within the monthly C&S report. An example summary of reported consignments is shown in Table 7 to illustrate particular points.

3.4.1 Providing general and country of origin information

Table 3 describes the general information which should be provided for each consignment of biofuel, as well as which of these data fields are required, and which are optional. The optional fields may influence whether a consignment can be identified as RED-ready.

Table 3 General information data fields for C&S reporting on the RFA Operating System (ROS)

ROS data field and description	Compulsory or optional?
Consignment number Each consignment number will be unique and generated automatically by the RFA Operating System (ROS). The consignment refers to an administrative consignment, not necessarily a physical consignment. A consignment is any amount of fuel with a homogeneous 'set of sustainability characteristics' (biofuel feedstock, biofuel production process, country of origin, NUTS2 compliant region, standard, land-use on 1 January 2008, plant in operation on 23 January 2008, equivalence trading, CI).	n/a – automatically generated
Internal consignment number Optional data field for the supplier to record their own consignment number for reference purposes.	Optional
Quantity of fuel Expressed in standard litres for liquid fuel or kilograms in the case of gas. In the case of BioETBE only the renewable component (47% of the volume) should be reported in line with HMRC requirements.	Compulsory
Fuel type Biodiesel, bioethanol, or biogas. Note that BioETBE should be reported as bioethanol in line with HMRC requirements.	Compulsory
Biofuel feedstock The feedstock type from which the fuel is made e.g. waste vegetable oil, wheat.	Compulsory – 'unknown' permitted

ROS data field and description	Compulsory or optional?
Biofuel production process Process-specific carbon default values are provided under the RED. The relevant process is dependent on the feedstock, but could be, for example: Lignite, natural gas or straw as process fuel in CHP plant for bioethanol from wheat, or methane capture (or not) for biodiesel from palm (see Table 31).	Optional
Country of origin The country of origin of the feedstock.	Compulsory – ‘unknown’ permitted
NUTS2 compliant region In order to claim RED-readiness, for EU feedstocks, parties should report whether or not the feedstock is from a region where the typical GHG emissions from cultivation of agricultural raw material can be expected to be lower than or equal to the emissions in the RED default value, a so-called ‘NUTS2 compliant region’. (Member State reports on emissions from cultivation are published on the EC Transparency Platform ⁴⁶ . Once analysed by the EC, data from these reports is included in the Carbon Calculator – new data can be used as soon as it is available whilst changes to existing NUTS2 data will apply from the next obligation period.) If the feedstock is not from a NUTS2 compliant region actual carbon values should be used for the feedstock cultivation stage in order to be RED-ready. During the RED-ready period, however, the RFA will continue to allow parties to report default carbon intensity values. Although there is not yet a complete list of compliant NUTS2 regions for all Member States, suppliers can still report a region for which the NUTS2 compliance status is unknown. However, such fuels will not be deemed ‘RED-ready’ under the RTFO. It is also possible for suppliers to use ‘regional’ cultivation data for NUTS2 regions for which the compliance status has been agreed by the Commission. If suppliers take this option, they should indicate whether they have used the NUTS2 data as regional data by means of the accuracy levels (see Table 5 below).	Optional – defaults to ‘n/a’ for non-EU countries and by-products
Plant in operation on 23 Jan 2008 Under the RED, biofuel from installations ⁴⁷ that were already operational on 23 January 2008 are not obliged to meet the 35% GHG threshold until 1 April 2013. Therefore, to claim RED-readiness for a biofuel that does not meet the GHG threshold the supplier will need to demonstrate that the biofuel plant was in operation on 23 Jan 2008. Y/N can be reported.	Optional

⁴⁶ Member State reports on Emissions from cultivation as required by Article 19.2: http://ec.europa.eu/energy/renewables/transparency_platform/emissions_en.htm

⁴⁷ See section 2.1 for the updated definition of the term ‘installation’.

ROS data field and description	Compulsory or optional?
<p>Equivalence trading</p> <p>Equivalence trading was common practice in the EU under the Common Agricultural Policy. It describes where crops grown under contract for energy use are substituted by other material from within the EU which has not been grown under an energy contract. However, this practice is in principle a book and claim type chain of custody system, which is not currently permitted under the RED.</p> <p>As such, the RFA intends to permit the continued use of equivalent trading for Year Four of the RTFO, but to disallow it from full RED implementation. A column has been added to the monthly reporting table to flag where equivalence trading has been used. Such biofuels will not count as being RED-Ready</p>	Optional

3.4.2 Providing sustainability information for each consignment

Suppliers can report any standard benchmarked against the RTFO Biofuel Sustainability Meta-Standard and any EC approved scheme. Table 2 contains the full list of standards available to be reported, and whether they are qualifying or non-qualifying.

Table 4 Sustainability information data fields for C&S reporting on ROS

ROS data field and description	Compulsory or optional?
<p>Standard</p> <p>This column is used to report the sustainability standard (voluntary scheme) to which the feedstock reported was produced.</p> <p>If the feedstock is not certified, report 'none – feedstock not certified', or if the data is not known, report 'unknown' (as shown in Consignment 33007 in Table 7).</p> <p>If the feedstock is a by-product, report 'by-product' (as shown in Consignment 33010 and 33011 in Table 7).</p> <p>If a specific audit has been carried out on the farm/plantation against the RTFO Meta-Standard criteria (in the absence of an available standard) report 'RTFO Biofuel Sustainability Meta-Standard' (as shown in Consignment 33004 in Table 7).</p> <p>If a specific audit has been carried out against the RED biodiversity criterion (in the absence of an available standard) report 'RED-Biodiv.' (as shown in Consignment 33002 in Table 7)⁴⁸.</p>	<p>Compulsory – 'unknown' permitted. Automatically defaults to 'by-product' for by-products.</p>
<p>'Env Level' and 'Social Level'</p> <p>The two entry fields labelled 'Env Level', for environmental level, and 'Social Level' identify the level of sustainability achieved against the environmental and social criteria of the RTFO Meta-Standard, respectively. This defaults to either a Qualifying Standard (shown as 'QS'), RTFO Biofuel Sustainability Meta-Standard (shown as 'RTFO'), or none/unknown if the standard reported does not meet either the Qualifying Standard or the RTFO Meta-Standard.</p> <p>If supplementary checks have been performed successfully on all of the gap criteria within the existing standard, the 'Env Level' and/or the 'Social Level' fields should illustrate the new level attained - either 'QS' or 'RTFO'.</p> <p>Where a specific audit has been carried out on the farm/plantation against the RTFO Meta-Standard and the full RTFO Biofuel Sustainability Meta-Standard level has been reached, 'RTFO' should be reported in this field.</p> <p>Where a specific audit has been carried out on the farm/plantation against the RTFO Meta-Standard and the equivalent of a Qualifying Standard level has been reached, 'QS' should be reported in this field.</p> <p>For by-products, 'QS' should be reported in the 'Env Level' and 'Social Level' fields.</p>	<p>Automatically generated from the 'Standard' column. Can be overwritten where a gap audit has been undertaken.</p>

⁴⁸ It is intended to allow a specific independent audit against the RED biodiversity criterion. However, insufficient detail is currently available from the RED to enable this option.

ROS data field and description	Compulsory or optional?
Land-use This field is used to report the land-use relevant to the feedstock on 1 January 2008. For guidance on how to determine the land-use on 1 January 2008, see Annex H. If the feedstock is considered a by-product (see Annex A) fill in: 'by-product'.	Compulsory – 'unknown' permitted. Automatically defaults to 'by-product' for by-products.

3.4.3 Unknown reporting

For any data field in the general or sustainability information sections for which verifiable information is not available, 'unknown' should be reported. It should be noted that the RED will require the introduction of mandatory sustainability standards. Once this is implemented at the national level 'unknown' reporting will not be acceptable for biofuel feedstock, NUTS2 compliant region (within EU, unless actual cultivation data is provided), and either standard or land-use on 1 Jan 2008 (depending on how compliance with the land-use criteria is being demonstrated).

3.4.4 Providing carbon information for each consignment

Fuel suppliers are required to report the carbon intensity of all renewable fuels, including by-products.

Table 5 Carbon information data fields for C&S reporting on ROS

ROS data field and description	Compulsory or optional?
<p>Carbon intensity</p> <p>This entry field is used to report the carbon intensity expressed in gCO₂e/MJ⁴⁹. The carbon intensity calculation, and therefore the figure reported, includes the impact of any direct land-use change.</p> <p>For EU feedstocks, if the feedstock is not from a NUTS2 compliant region, actual carbon values should be used for the cultivation stage in order to claim RED-readiness. Note that in the RED-ready period the RFA will continue to allow the use of default values.</p> <p>Reporting a carbon intensity of 54 gCO₂e/MJ or less is equivalent to the RED threshold of a minimum 35% GHG emission saving</p> <p>For guidance on assessing the carbon intensity of a consignment of biofuel see Annex G.</p> <p>For guidance on assessing the carbon intensity of the impact of land-use change see Annex H.</p>	<p>Compulsory - the CI number will be automatically generated; however, suppliers can overwrite this number if an Accuracy Level greater than 2 is claimed.</p>
<p>Accuracy Level</p> <p>The accuracy level provides information on which part of the supply chain actual data was provided for, if at all. The accuracy levels are used to determine the RED-readiness of the fuel in terms of GHG criteria. For guidance on establishing the Accuracy Level see Annex I.</p>	<p>Compulsory – this automatically defaults to 0 (where only fuel type is known), 1 (where the feedstock is known) or 2 (where the process is known). Accuracy Levels 1 and 2 can be overwritten if suppliers are claiming a higher Accuracy Level, through providing actual data for particular stages of the supply chain.</p>

3.4.5 Indicative RED-ready columns

Each of the three columns in the 'Indicative RED-ready' refer to one of the mandatory RED criteria. The fourth column indicates overall RED-readiness.

The columns will automatically fill to indicate whether the biofuel consignment is RED-ready, reading from information already reported.

⁴⁹ Grams of carbon dioxide equivalent per megajoule.

Table 6 Indicative RED-ready data fields for C&S reporting on ROS

ROS data field and description	Compulsory or optional?
GHG threshold This column reads from the 'NUTS2 compliant region', 'Carbon intensity', 'Accuracy level', 'Plant in operation on 23 Jan 2008' and 'Equivalence Trading' columns. Note that if a supplier uses the default value but the NUTS2 region compliance status is unknown, the consignment of biofuel will <i>not</i> be counted as RED-ready;	n/a – automatically generated
Biodiversity This column reads from the 'Standard' column and is met for those standards that meet the RED biodiversity criteria (see Table 2). This is also met if the previous land-use is 'Cropland – non-protected'. If 'Cropland – protected' is reported, parties must be able to provide evidence that the production of the biofuel feedstock did not interfere with the nature protection purposes of the land – this can be achieved through reporting a Qualifying Standard that meets the RED biodiversity criterion or through the RED Biodiversity Audit ⁵⁰ .	n/a – automatically generated
Carbon Stock This column reads from the 'Land-use on 1 Jan 2008' column. Note that the RED carbon stock criterion does not apply if the land has the same status now as it did on 1 January 2008.	n/a – automatically generated
RED-ready (indicative) This column reads from the three previous columns, showing whether the biofuel consignment is RED-ready.	n/a – automatically generated

⁵⁰ It is intended to allow a specific independent audit against the RED biodiversity criterion. However, insufficient detail is currently available from the RED to enable this option.

Table 7 Illustrative monthly reporting requirement for C&S information – example data

General information						Country of origin information		Sustainability information				Carbon information		Other information		Indicative RED-Ready			
Consign-ment no.	Internal Consign-ment no.	Fuel type	Quantity of fuel, litres	Biofuel Feedstock	Biofuel Production Process	Country	NUTS2 compliant region	Standard	Env Level	Social Level	Land-use on 1 Jan 2008	Carbon intensity, gCO ₂ e/MJ	Accuracy level	Plant in operation on 23 Jan 2008?	Equivalence trading	GHG	Biodiversity	C-stock	RED-ready
33001		Bioethanol	250,000	Wheat	Unknown	UK	Y	LEAF	QS	-	Cropland – non-protected	70	1	Y	N	Y	Y	Y	Y
33002		Bioethanol	100,000	Wheat	Natural gas CHP	France	FR51	RED - Biodiv.	-	-	Cropland – protected	44	2	N	N	N	Y	Y	N
33003		Bioethanol	250,000	Sugar beet	-	UK	N	Red Tractor	QS	-	Cropland – non-protected	35	6	Y	Y	Y	Y	Y	N
33004		Bioethanol	1,000,000	Sugar cane	-	Brazil	N/A	RTFO Meta-Standard	RTFO	RTFO	Cropland – non-protected	24	1	Y	N	Y	Y	Y	Y
33005		Bioethanol	500,000	Unknown	-	Unknown	Unknown	Unknown	-	-	Unknown	115	0	Y	-	Y	N	N	N
33006		Biodiesel	1,000,000	Oilseed rape	-	UK	Y	Red Tractor	RTFO	RTFO	Cropland – non-protected	52	1	Y	N	Y	Y	Y	Y
33007		Biodiesel	250,000	Oilseed rape	-	Unknown	Unknown	Unknown	-	-	Unknown	52	1	Y	-	Y	N	N	N
33008		Biodiesel	500,000	Palm oil	Methane capture	Malaysia	N/A	RSPO-Greenpalm	QS	QS	Cropland – non-protected	37	2	Y	N	Y	Y	Y	N
33009		Biodiesel	500,000	Soy	-	Argentina	N/A	RTRS	QS	RTFO	Grassland – ag. use	94	1	Y	N	Y	N	Y	N
33010		Biodiesel	250,000	UCO	-	UK	N/A	By-product	QS	QS	By-product	14	1	N	N	Y	Y	Y	Y
33011		Biogas	150,000	Dry manure	-	UK	N/A	By-product	QS	QS	By-product	15	1	Y	N	Y	Y	Y	Y
Automatically generated.	Optional column for company's internal reference number.	For standard terminology see Annex J. BioETBE is reported as bioethanol.	Report in litres for liquid biofuel, and kg for gaseous biofuel.	For standard terminology see Annex J or RFA website.	For process options see Annex G.	Country of feedstock origin. See Annex J or RFA website.	See section 3.3.4 for explanation of NUTS2 region.	See Annex A for standards. See Annex J for standard terms.	See section 3.3 for explanation of sustainability levels.		See Annex H for land-use categories.	See Annex G for default values and Annex I for Accuracy Level.		Optional, only if do not meet RED GHG threshold.	Optional, not RED-Ready. See section 5.5.	Automatic – see section 3.4.2.			

Explanations of example data in Table 7 – the summary monthly data report

Consignment 33001 represents 250,000 litres bioethanol from wheat of UK origin.

- The biofuel supplier can provide verifiable evidence that the wheat is LEAF certified - 'LEAF' is reported in the 'Standard' column.
- LEAF is an environmental Qualifying Standard (see Annex A). The 'Env Level' therefore contains 'QS'. LEAF is not a social Qualifying Standard therefore the 'Social Level' is blank. ROS will populate this automatically.
- The supplier knows the feedstock and country of origin of the biofuel. The supplier also knows that the wheat is from a NUTS2 compliant region – i.e. the UK region has been identified as one in which the typical GHG emissions associated with cultivation of wheat can be expected to be lower than or equal to the emissions in the default value. The supplier has used the RED GHG default values. The supplier does not, however, know anything about the biofuel production process. Using all these pieces of information ROS will autopopulate the Carbon Intensity field. The supplier may also look up the relevant default value in Annex G.
- As the land-use was 'Cropland – non-protected' on the reference date the default tables in Annex H provide a default for the impact of LUC as 'zero' and the combined carbon intensity figure for fuel and the impact of land-use can be reported. Annex I identifies the Accuracy Level used for the carbon intensity figure as 1 which is reported in the relevant field.
- The bioethanol production plant was already operational on 23 Jan 2008 so a 'Y' should be entered in the 'Plant in operation on 23 Jan 2008?' column.
- The wheat was not traded using 'Equivalence trading' so 'N' is reported.
- The default carbon intensity for wheat is 70 gCO₂e/MJ. This equates to a GHG saving of 16% when compared to fossil petrol, which is below the GHG savings threshold of 35% specified in the RED. However, as the plant was operational prior to 23 Jan 2008 the biofuel still meets the RED's GHG requirement. ROS therefore generates a 'Y' in the RED-ready GHG column.
- The supplier reported that the land-use on 1 Jan 2008 was 'Cropland – non-protected' and so ROS automatically generates a 'Y' in the 'Biodiversity' and 'Carbon stock' (C-Stock) columns.

- Since the biofuel has fully met all of the RED-ready requirements, ROS automatically generates a 'Y' in the 'RED-ready' column.

Consignment 33002: represents 100,000 litres bioethanol from wheat of French origin.

- In this hypothetical situation, France has not yet published data on which regions in the country are NUTS2 compliant and which not. The supplier knows the NUTS2 region in which the wheat was cultivated and reports the region's code – 'FR51'. The RFA will allow suppliers to report the EC default values, however, the consignment will not be deemed RED-ready. The only way to avoid this will be to provide actual data or regional data for the cultivation step.
- This time the supplier knows that the biofuel production process used natural gas as the process fuel in a CHP plant. The supplier is therefore able to use a process-level default value – accuracy level 2. From Annex G the default carbon intensity to report is 44 gCO₂e/MJ – which will autopopulate in ROS based on the information provided. This corresponds to a carbon saving of 47%, above the GHG savings threshold of 35% specified in the RED. In this case, the plant was not operational prior to 23 Jan 2008.
- The GHG default is above the RED GHG saving threshold, but the supplier has not been able to report that the region is NUTS2 compliant and has not used actual data or regional data for cultivation, so the consignment is not deemed RED-ready. ROS generates a 'N' in the GHG column.
- The feedstock is from an area of cropland that is designated for nature protection purposes (see column 'Land-use on 1 January 2008'). However, the supplier has carried out a successful independent audit against the RED biodiversity criterion and is able to provide evidence that the feedstock production did not interfere with the nature protection purposes of the land. 'RED-Biodiv.' is therefore reported in the Standard column. ROS automatically generates a 'Y' in the Biodiversity column.
- 'Cropland-protected' meets the RED carbon stock criterion and ROS automatically generates a 'Y' in the C-Stock column.
- Overall the biofuel scores a 'N' for RED-readiness, as there is no compliance with the GHG criterion.

Consignments 33003 and 33006: both represent biofuel from the UK from Red Tractor certified feedstock.

- Consignment 33003 represents a typical Red Tractor case – Red Tractor is an Environmental Qualifying Standard and therefore 'QS' is reported in the Env Level column. Red Tractor

is not a Social Qualifying Standard therefore the Social Level column is blank.

- The feedstock is known to be from a region which is not NUTS2 compliant. Actual cultivation data has therefore been used to carry out the carbon calculation in Consignment 33003. Annex I illustrates that Accuracy Level 6 should be reported where actual data is used for cultivation. The carbon intensity reported is 35 g CO₂e/MJ which meets the RED-ready GHG threshold. The GHG column will therefore autopopulate with 'Y'.
- The RED-ready Biodiversity column autopopulates with 'Y' because Red Tractor (indicatively) meets the RED biodiversity criterion. The previous land-use is 'Cropland – non-protected', which would also meet the RED-ready Biodiversity criterion. The previous land-use reported also meets the RED C-stock criterion.
- However the feedstock was traded using 'Equivalence trading' (a book and claim chain of custody system) and as such the biofuel is not RED-Ready. ROS automatically generates a 'N' in the overall 'RED-ready' column.
- In the case of Consignment 33006, supplementary checks have been carried out on all gap criteria by the Red Tractor auditor and the farm also complies with all the criteria of the RTFO Biofuel Sustainability Meta-Standard. This is illustrated by reporting 'RTFO' in the Environment and Social columns.
- The feedstock is known to be from a NUTS2 compliant region. The supplier is therefore permitted to use the RED GHG default value of 52 gCO₂e/MJ which achieves the RED-ready GHG threshold. The GHG column will therefore autopopulate with 'Y'. For the same reasons as for Consignment 33003 above, this consignment meets all three RED-ready criteria and is therefore overall RED-ready.

Consignment 33004: represents bioethanol from sugar cane of Brazilian origin.

- The sugar cane is not certified by any standard; however, a full audit has been carried out against all the criteria of the RTFO Biofuel Sustainability Meta-Standard. 'RTFO Biofuel Sustainability Meta-Standard' is reported in the 'Standard' field. The appropriate level of sustainability achieved following the audit should then be reported in the 'Env Level' and 'Social Level' columns. In this case the full RTFO Biofuel Sustainability Meta-Standard has been achieved.
- The NUTS2 compliant column is not applicable in this case as the feedstock is from outside the EU. The suppliers has used the GHG default values.

- The carbon intensity reported (24 gCO₂e/MJ) delivers a GHG saving which is above the RED threshold', the RTFO Meta-Standard indicatively meets the RED biodiversity criterion, and reporting 'Cropland – non-protected' meets both the Biodiversity criterion and the C-stock criterion. This consignment is therefore RED-ready.

Consignments 33005 and 33007: represent consignments with some unknown data.

- For the general and sustainability sections 'unknown' is reported; although the feedstock is known for Consignment 33007.
- The default values from Annex G are used to report the carbon intensity and the default value in Annex H defines the default value of zero in the case of unknown land-use.
- For Consignment 33005, the highest level default value for bioethanol is reported as this is all that is known about the fuel (accuracy level 0). The carbon intensity reported (115 gCO₂e/MJ) does not meet the RED GHG threshold. However, the biofuel production plant was in operation on 23 Jan 2008 and therefore the grandfathering clause applies – ROS autopopulates 'Y' in the GHG column. As no further information is known about the fuel, it does not meet any of the other RED criteria and the consignment is not RED-ready.
- For Consignment 33007, an Accuracy Level 1 carbon default can be reported as both the fuel and feedstock are known. In this pre-RED implementation period, despite the country of origin being unknown, the default carbon intensity (52 gCO₂e/MJ) may still be reported. After RED-implementation this will be not allowed. However, because the biofuel production plant was in operation on 23 Jan 2008) so ROS autopopulates 'Y' in the GHG column.
- Note that reporting 'unknown' will not be permitted once the RED becomes mandatory (for feedstock, NUTS2 compliant region (within the EU, unless actual cultivation data is provided), and land-use on 1 Jan 2008). Reporting the highest level default, as reported in Consignment 33005, will not be permitted once the RED is fully implemented.

Consignment 33008: the Malaysian palm oil is verified as being RSPO certified.

- RSPO is both an environmental and social Qualifying Standard and therefore 'QS' will autopopulate in both the 'Env Level' and 'Social Level' columns.
- The supplier has evidence that there is methane capture at the oil mill the feedstock was processed at and is therefore able to use a process-level carbon default value – accuracy level 2.

- The NUTS2 column is not applicable as the feedstock is from outside the EU.
- The carbon intensity reported (37 gCO₂e/MJ) is above the required RED threshold, RSPO indicatively meets the RED biodiversity criterion, and reporting 'Cropland – non-protected' meets both the Biodiversity criterion and the C-stock criterion.
- However the RSPO certification was demonstrated using the 'Greenpalm' book and claim chain of custody system, which is not permitted under the RED. This consignment is therefore not RED-ready.

Consignment 33009: represents biofuel reported with land-use change.

- The land-use on 1 January 2008 has been identified as Grassland – agricultural use (definitions provided in Annex H). Table 34 gives the default chain carbon intensity, which is 58 gCO₂e/MJ for soy biodiesel and the land use change impact has been calculated as 36 gCO₂e/MJ. The total, which should be reported, is 94 gCO₂e/MJ. This carbon intensity does not meet the RED GHG threshold, however as the biofuel production plant was operational on 23 Jan 2008, the grandfathering clause applies and ROS autopopulates a 'Y' in the GHG column.
- RTRS, the standard reported, meets the Env QS level and the full Social Meta-Standard level. ROS autopopulates this information. However, current RFA benchmark results (see Table 2) indicate that RTRS does not meet the RED biodiversity criterion. The previous land-use reported also does not meet the RED biodiversity criterion. ROS therefore autopopulates an 'N' in the Biodiversity column.
- Grassland is not one of the high carbon stock land categories as defined by the RED, so the consignment does meet the C-stock criterion.
- Overall, however, the consignment is not RED-ready due to non-compliance with the biodiversity criterion.

Consignments 33010 and 33011: represent biofuels from feedstocks considered by-products.

- The country of origin of the by-product is reported. The NUTS2 column is only relevant to agricultural feedstocks and is therefore not applicable for by-products.
- 'By-product' should then be entered in the 'Standard' and 'Land-use' fields. 'QS' will autopopulate in both the 'Env Level' and 'Social Level' fields. 'By-product' should also be reported in the 'Land-use on 1 Jan 2008' column.

- No detailed information was available to calculate the carbon intensity therefore Annex G is used to look up the relevant default value. Annex I is used to identify the relevant Accuracy Level undertaken for the calculations – in this case Accuracy Level 1.
- The carbon intensities reported for these consignments are 14 and 15 gCO₂e/MJ. These are above the required RED GHG savings threshold and both consignments are therefore RED-ready for GHG.
- By-products automatically meet both the RED biodiversity and C-stock criteria.
- Both of these consignments are therefore RED-ready overall.
- **Consignment 33011** is biogas, and so the mass is entered, expressed in kilograms not litres.

3.5 Further guidance

For further guidance on environmental and social sustainability standards, see Annex A.

For a full list of criteria and indicators of the RTFO Biofuel Sustainability Meta-Standard, see Annex C.

A detailed overview of the results of the benchmark of existing standards is provided in Annex D. This Annex also illustrates the gap criteria for each benchmarked standard.

3.6 Changing C&S data after the monthly reporting deadline

If new evidence about the C&S characteristics of a fuel emerges after a monthly report has been submitted but before RTF certificates have been awarded, the data can be corrected by editing the submitted reports. However, if certificates have already been awarded, suppliers will need to obtain permission from the RTFO Administrator to change the data. This will involve resubmitting the entire data set for the month.

Permission from the RTFO administrator may be sought to submit revised C&S data until 28 September following the end of the obligation period in which the C&S information was submitted⁵¹.

⁵¹ The Department for Transport are consulting on introducing an earlier date of 12 August for final verification in their proposals for implementing the RED. Suppliers

3.7 Reporting on purchased certificates

Account holders who purchase an RTFC do not have any C&S reporting requirements with respect to the purchased RTFCs.

3.8 Publication of information

The RFA has published reports on individual supplier performance and information on the environmental performance of the RTFO as a whole. The Department for Transport will determine what information is published from April 2011.

should be aware that the verification date could move forwards by this period for verification of 2011/12 data.

4 Annual Reporting

Transport fuel suppliers are required to submit Annual C&S Reports as evidence to support the C&S information included in applications for RTFCs. This chapter sets out the requirements for Annual Reporting, including the information that fuel suppliers are expected to report on in their Annual Reports. This chapter also includes details on how the RFA may use the C&S information provided.

Key changes to this chapter:

- Government targets are removed from Table 8.
- Suppliers reporting byproducts not listed in Annex B must provide evidence that their feedstock is a byproduct in their Annual Report.

4.1 Small supplier exemption

Suppliers applying for fewer than 450,000 RTFCs during an obligation period are not required to submit an Annual Report. However, it should be noted that although the exemption for the Annual Report and related requirement to have C&S data independently verified is maintained for the 2010/11 reporting period, the RFA anticipates that a verifier's statement will be required for all RTFCs used in future obligation periods. Therefore, RTFCs issued to suppliers that take advantage of the exemption may not be valid to 'carry-over' into subsequent periods⁵². This is due to the anticipated implementation of the RED mandatory C&S criteria into UK legislation. The Department for Transport is currently consulting on legislation to implement the RED.

4.2 What to report

The core information in the Annual Report from the fuel supplier consists of the aggregated data from monthly reports over a single obligation period (15 April to 14 April inclusive). This aggregated

⁵² Under the RTFO, obligated suppliers may meet up to 25% of their obligation with RTFCs that were issued in the previous period. The Department for Transport have proposed that this 'carry-over' facility may be maintained for future obligation periods for RTFCs issued to biofuels that meet the RED carbon and sustainability criteria.

quantitative data must incorporate any changes that have been made by a supplier submitting an edited or revised report (see section 3.6). The Annual Report also requires fuel suppliers to provide additional qualitative information relevant to the sustainability and GHG saving of their renewable transport fuels.

While the information detailed below is a requirement of Annual Reports, the structure as outlined below is not essential but is provided for guidance.

Chapter 1: Introduction. A general introduction setting out the scope and context of the report and the overall approach and philosophy of the supplier in sourcing renewable transport fuels.

Chapter 2: Should contain the aggregate summaries of the C&S characteristics of the fuel supplied during the obligation period (from the monthly data sheets) in the formats illustrated in Tables A and B.

If suppliers have reported a feedstock that they believe to be a by-product, but which is not listed in Annex B suppliers should include evidence that the feedstock meets the RTFO definition of a by-product. That is, 'a feedstock that represents less than 10% of the farm or factory gate value'. The evidence should be assessed by a verifier and included here.

Chapter 3: This chapter should include information on the following items (where information is available):

- Fuel supplier information:
 - Past year's and planned activities to improve the proportion of sustainably sourced feedstock and reduce average carbon intensity;
 - Past year's and planned activities to support standard development for sustainable biofuel feedstock (membership of RSPO, RTRS, Bonsucro, etc);
 - Past year's and planned activities to promote biofuel projects with a low risk of iLUC and, where possible, an indication of the volume of biofuel originating from such projects. Detail of the methodology for identifying such areas is in Table 17;
 - Past year's and planned activities to improve the type of carbon data which is being used – e.g. the different default values or actual data;
 - Environmental management system certificates;
 - Successful prosecutions for breaches of compliance with any environmental and/or social regulations related to biofuels activities;

- Existing verified environmental or corporate responsibility reports;
- Information on other parties within the supply chain:
 - Where fuel suppliers have information on their main crop producers, information should be provided on the percentage of that company's total production which meets respected sustainability standards. If parties do not wish to disclose the identity of crop producers and intermediate processors, anonymous information can be reported. The information has to be verifiable by the verifier but the identity will not be published;
- Environmental management system certificates held, e.g. ISO 14001;
- Successful prosecutions for breaches of compliance with any environmental and/or social regulations related to biofuels activities.

Suppliers are free to include any additional information they deem relevant in their Annual Reports including any comments specific to the verification exercise.

In addition, a verifier's opinion must be submitted to the RFA along with the Annual Report. For further guidance on verification, see Chapter 6 and the separate [guidance document for verifiers](#).

Supplier Annual Reports should be e-mailed to the RTFO Administrator.

Table 8 Annual Report Table A. Summary of C&S data by feedstock

Summary of feedstock mix; percentage of verifiable data reported; percentage of feedstock which meets the Qualifying Standards and/or RTFO full Biofuel Sustainability Meta-Standard; average carbon intensity and corresponding GHG savings. This table contains example data.

Feedstock	General		Environmental	Social		Carbon
	% Fuel supplied by feedstock type (by volume)	% Data reported on biofuel characteristics	% Meeting Qualifying and/or RTFO standard	% Meeting Qualifying and/or RTFO standard	Average carbon intensity, gCO ₂ e/MJ	Average % GHG saving
Biodiesel						
Palm oil	10	30	50	50	37	56
Rapeseed oil	70	40	85	85	52	38
Soy oil	20	40	40	40	58	31
Bioethanol						
Sugar cane	20	20	10	10	24	71
Corn (EC produced)	10	30	70	70	43	49
Wheat	40	50	80	80	44	47
Sugar beet	20	60	75	75	40	52
Unknown	10	0	0	0	115	-36
Weighted average (all fuels)		39	65	65	49	42

4.2.2 How to fill in Annual Report Table A: Annual summary table

Percentage fuel supplied by feedstock type (by volume)

This column is a summary of the feedstock mix for the whole obligation period. The feedstock mix for each different biofuel should be shown separately. Unknown feedstocks must be included in the table under the appropriate biofuel and the total feedstock mix per biofuel type must add up to 100% including any unknown percentage.

Example: Biodiesel supply during this period was 10% palm oil, 70% rapeseed oil and 20% soy oil.

Percentage of data reported

This column shows how much actual data has been reported by the supplier, instead of reporting 'unknown', for the following fields: 'biofuel feedstock', 'country of origin', 'standard' and 'land-use on 1 Jan 2008'. Reporting 'none – feedstock not certified' in the standard name field does not count towards data capture.

The percentages are calculated on the volume of fuel for which actual data has been reported, not on the number of consignments.

Example: A supplier supplies a volume of renewable fuel that represents 80% biodiesel and 20% bioethanol. The biodiesel comprises palm (30%), soy (20%) and oilseed rape (50%).

100% of the palm is from a known feedstock;

60% of the palm is from a known country of origin;

50% of the palm met a sustainability standard; and

0% of palm was from a known previous land-use.

Therefore $(100\% + 60\% + 50\% + 0\%) / 4 = 52.5\%$ of data has been reported for the palm biodiesel. Palm represents 30% of the volume of biodiesel supplied and biodiesel makes up 80% of the total volume of renewable fuel supplied. Therefore, the contribution of palm to the total data capture target for all supplied renewable fuels for this party is $52.5 \times 30\% \times 80\% = 12.6\%$. The same calculation is carried out for the other biodiesel feedstocks as well as the bioethanol feedstocks. The sum of the contributions of all feedstocks is reported as the weighted average for all renewable fuels supplied.

Percentage of feedstock which meets the Environmental and Social Qualifying Standards

Percentages are calculated for each feedstock as a percentage of the total volume of biofuel from that feedstock for which a Qualifying Standard or RTFO Biofuel Sustainability Meta-Standard has been reported in the monthly data reports. The percentage meeting the Environmental Qualifying Standard is not necessarily the same as the percentage meeting the Social Qualifying Standard. The percentages meeting a Qualifying Standard should include the fraction of feedstock which meets the full RTFO Biofuel Sustainability Meta-Standard.

The percentages are weighted averages with the volume of fuel providing the weighting.

Average carbon intensities

Average carbon intensities are weighted averages, with the volume of fuel providing the weighting. By way of an example consider the first row of the table: two consignments of palm oil biodiesel have been supplied:

Consignment 1: 1,000 litres, carbon intensity = 50 gCO₂e/MJ;

Consignment 2: 2,000 litres, carbon intensity = 40 gCO₂e/MJ.

Consignment 1 contributes 33% of the total volume ($1000 / (1000 + 2000) = 33\%$) and Consignment 2 contributes 67% of the total volume ($2000 / (1000 + 2000) = 67\%$). Therefore, the weighted average carbon intensity is 43.3 gCO₂e/MJ as: $(33\% \times 50) + (67\% \times 40) = 43.3$.

Average GHG saving

Average GHG saving is a comparison of the average carbon intensity of the renewable fuel described above against that of the relevant fossil fuel. See Annex G for the relevant fossil reference value.

Table 9 Annual Report Table B. C&S characteristics of each feedstock

This table contains example data for C&S characteristics for palm oil.

General information	Country of origin information	Sustainability information				Carbon information	
% of total palm oil	Country	Standard	Env Level	Social Level	Land-use on 1 Jan 2008	Carbon intensity, gCO ₂ e/MJ	GHG saving
20	Malaysia	RSPO	QS	QS	Cropland – non-protected	37	62
60	Malaysia	Unknown	-	-	Unknown	68	36
20	Indonesia	Unknown	-	-	Unknown	68	36

4.2.3 How to fill in Annual Report Table B: Feedstock specific information

A separate table must also be included in the Annual Report for each feedstock type supplied in the obligation period, e.g. palm oil, rapeseed oil etc (unless the feedstock represented is less than 3% of the annual total volume of biofuel supplied). These tables aggregate all the administrative consignments, with weighted average carbon intensity for each aggregation. Any consignments of fuel with identical country of origin and sustainability information may be aggregated into a single row in the table.

- 'Percentage of total feedstock' column - for each individual feedstock, e.g. palm oil. This is the amount of fuel, expressed as a percentage of the total fuel supplied from this feedstock, with the characteristics described.
- The remaining columns correspond directly to the columns in the monthly data reports: Country of origin, Standard, Env level, Social level, Land-use on 1 January 2008, and Carbon Intensity information.
- Any consignments of fuel with identical sustainability information that contributed less than 3% of the fuel from this feedstock may be aggregated or can be identified separately.

Note: carbon data should be presented as a weighted average. See Annex G for default carbon intensity figures for different fuel chains.

In the example in Table B 20% of the total palm oil biodiesel from the company was of Malaysian origin and was RSPO certified (RSPO is both an environmental and social Qualifying Standard); 60% of the palm oil biodiesel was of Malaysian origin but with unknown sustainability characteristics; and the remaining 20% palm oil biodiesel was of Indonesian origin with unknown sustainability characteristics.

4.3 When to report

Each Annual C&S Report should cover one obligation period. The Annual C&S Report is due by 28 September⁵³ after the end of the obligation period which it covers.

4.4 How is Annual Reporting data used?

The RFA used the information in the Suppliers' Annual Reports in preparing its Annual Report to Parliament on the operation of the scheme, and published these on the RFA website. The Department for Transport will determine reporting policy from April 2011.

⁵³ The Department for Transport are consulting on introducing an earlier date of 12 August for final verification in their proposals for implementing the RED. Suppliers should be aware that the verification date could move forwards by this period for Year Four.

5 The chain of custody

Reported C&S data must be verifiable. Therefore the C&S data reported by the fuel supplier has to be traceable back to the party or parties who generated the information. This chapter explains which types of chain of custody systems are permitted and gives specific guidance for setting up a (temporary) chain of custody where none yet exists.

Key changes to this chapter:

- Additional guidance on:
 - How to define a 'site'
 - How to allocate C&S data to outgoing consignments. Note that 'proportionate feedstock reporting' is no longer a requirement for the part of the supply chain where blended biofuels are traded.
 - How to aggregate consignments with different carbon intensities.
 - Timeframe over which a mass balance should operate
- Note that the RED currently does not allow book and claim chain of custody systems. The RTFO Administrator therefore intends to accept the use of book and claim systems for Year Four of the RTFO, but to disallow book and claim from the time of full RED implementation.

5.1 General

5.1.1 Terminology

Throughout this chapter the following terminology will be used:

- Consignment: any amount of product with an identical 'set of sustainability characteristics'. The set of sustainability characteristics is:
 - Fuel type;
 - Biofuel feedstock;
 - Biofuel production process;
 - Country of origin;
 - NUTS2 compliant status or region (for EU feedstocks only);

- Standard(s) (including any supplementary checks where these have been performed);
- Land-use on 1 January 2008;
- Equivalence trading;
- Whether the plant is 'grandfathered';
- Carbon intensity.
- Input: any physical input sourced by any party in the supply chain. For example rapeseed sourced by a rapeseed crusher or rapeseed oil sourced by a biodiesel producer.
- Output: any physical output supplied by any party in the supply chain. For example rapeseed supplied by a rapeseed farm or rapeseed oil supplied by a rapeseed crusher.
- Conversion factor: refers to the amount of output produced per unit of input. For example, the oil extraction rate or the amount of biodiesel produced per unit of vegetable oil.
- Inventory: refers to a stock of physical product or C&S data.
- Chain of custody: for the purpose of the RTFO C&S Technical Guidance, a chain of custody is a system which links the reported volumes of biofuel with certain C&S characteristics to the volumes of feedstocks which possess the same C&S characteristics. An essential aspect of the chain of custody system, therefore, is that it must be able to guarantee that for each unit of biofuel with certain carbon and sustainability characteristics reported to the RFA an equivalent amount of feedstock with the same sustainability characteristics has been added to the market.

5.1.2 Aggregating multiple consignments

Multiple consignments can be aggregated at any point in the supply chain provided the individual consignments have identical 'sets of sustainability characteristics' as defined above. Consignments with different carbon intensities can be aggregated for reporting purposes if all of the criteria above are identical and as long as **aggregation does not enable consignments that would not have met the minimum GHG emission threshold to lower their average carbon intensity and then meet the threshold**⁵⁴. The overall carbon intensity for aggregated

⁵⁴ Suppliers and verifiers should use the disaggregated defaults as a guideline when assessing whether a consignment is on track to meet the GHG saving threshold at earlier stages of the supply chain. So, in general, GHG savings from a single step or up to a point in the fuel chain combined with defaults for the rest of the fuel chain should meet the GHG threshold if combining with other consignments of biofuel to report a single weighted average carbon intensity

consignments compliant with this rule is given by calculating a weighted average (by volume) of all the carbon intensities of the different consignments – see Annex G.

Biofuel sourced from a plant in operation on 23 January 2008 i.e. 'grandfathered' fuel may be aggregated with non-grandfathered fuel but it cannot be claimed that the overall administrative consignment is 'grandfathered'.

5.2 Which chain of custody systems are permitted for C&S reporting under the RTFO?

To validate the accuracy of C&S reports a chain of custody must be established from the party which generates the C&S information to the reporting party. In general, three different types of chain of custody systems are distinguished:

- Bulk commodity systems (physical segregation);
- Mass balance systems (units in = units out);
- Book and claim systems (tradable certificates)⁵⁵.

Note that the RED does not currently permit the use of a book and claim chain of custody system (Article 18.1). In January 2011 the EC published a review of chain of custody systems. This report confirms that mass balance (or more stringent) is the only chain of custody system currently permitted under the RED. The EC will continue to monitor the situation and report again in 2012. **The RFA therefore intends to accept the use of book and claim systems for Year Four of the RTFO, but to disallow book and claim from the time of full RED implementation.**

The chain of custody must operate reliably and prevent abuse such as double counting. It must also be relevant to the feedstock which is used in the production of the biofuel. For example, a biodiesel producer which produces biodiesel from 100% oilseed rape is not permitted to report the fuel as being sourced from palm oil.

Where existing certifiable systems are in operation that cover the chain of custody (as identified in Table 10) they can be used under the RTFO for the RED-Ready period. From full RED implementation, only such systems that meet the requirements of a mass balance system will be permitted. Where no certifiable chain of custody system is in operation, a mass balance approach should be used.

⁵⁵ If approved by the RTFO Administrator. To request that a new book and claim system be considered for approval please contact the RTFO Administrator directly.

Few book and claim chain of custody systems are currently operational for biofuel feedstocks. Until now, before a book and claim chain of custody system is permitted to be used under the RTFO, the RFA has assessed the reliability of the chain of custody to determine whether the system is permitted to be used in making C&S claims under the RTFO. To date, one book and claim system has been benchmarked by the RFA and accepted for inclusion in the RTFO:

GreenPalm (RSPO certified palm oil)⁵⁶

As book and claim systems will not be permitted after full RED implementation, an option to report 'RSPO-GreenPalm' has been added under the RTFO to distinguish book and claim RSPO-certified palm oil from non-book and claim RSPO-certified palm oil.

5.3 When to set up a chain of custody

Several existing Qualifying Standards, such as the Forest Stewardship Council (FSC), have defined their own chain of custody. In this case a certified chain of custody already exists and can be used. The supplier must be able to provide proof that its producer sourced the relevant feedstocks through the certified chain of custody of the existing standard.

However, there are several limitations in using a chain of custody system of an existing standard:

- At the time of writing, a number of the Qualifying Standards do not have an operational chain of custody, see Table 10.
- Existing Qualifying Standards currently do not contain GHG data and therefore no claims can be made concerning performance in these cases. RFA fuel chain carbon default must be used, or the GHG data should be independently verified.
- The chain of custody may not be in place between the biofuel producer and the ultimate supplier who is applying for RTFCs.

These limitations imply that it will be necessary for many suppliers to set up their own chain of custody: at least until existing standards develop their own chain of custody. For these situations more detailed guidance on operating a reliable mass balance type

⁵⁶ In June 2008 the RFA assessed GreenPalm's book and claim system for use within the RSPO. GreenPalm was found to be a reliable chain of custody system and was approved for use in making C&S claims during the 2008/09 RTFO obligation period, provided a number of recommendations were met by the end of 2008. A second review took place in January 2009, which confirmed that these recommendations had been met. Further details can be found at the GreenPalm [website](#).

of chain of custody is given below. The mass balance type of chain of custody is expected to provide the least number of obstacles to short term implementation.

Suppliers may set up different types of chains of custody, if they wish to do so, provided it can be shown a) that they function reliably and are permitted by the RFA and b) are accepted by the standards for which they are used.

Table 10 Existing chain of custody for several standards and initiatives

Schemes marked with '*' have been benchmarked by the European Commission.

Standard name	Bulk commodity	Mass balance	Book and claim
Bonsucro (formerly Better Sugar Cane Initiative, BSI)	Under development		
Abengoa RED Bioenergy Sustainability Assurance (RBSA) *		Yes	
Biomass Biofuels voluntary scheme (2BSvs) *		Yes	
Bonsucro EU (formerly Better Sugar Cane Initiative, BSI) *		Yes	
Forest Stewardship Council (FSC)	Yes	Yes	-
Genesis Quality Assurance (Genesis QA)	-	-	-
Greenenergy Brazilian Bioethanol verification programme (Greenenergy) *		Yes	
International Sustainability and Carbon Certification (ISCC) *		Yes	
Linking Environment And Farming (LEAF)	-	-	-
Red Tractor (formerly Assured Combinable Crops Scheme, ACCS)	-	-	-

Standard name	Bulk commodity	Mass balance	Book and claim
Roundtable for Sustainable Biofuels (RSB)	Yes	Yes	-
Roundtable for Sustainable Biofuels EU RED (RSB) *	Yes	Yes	-
Roundtable on Sustainable Palm Oil (RSPO)	Yes	Yes	Yes
Round Table on Responsible Soy (RTRS)	Under development		
Round Table on Responsible Soy (RTRS) *		Yes	
Sustainable Agriculture Network/ Rainforest Alliance (SAN/RA)	Yes	-	-

5.4 Guidance for operating a mass balance type of chain of custody

5.4.1 Scope

Each party in the biofuel supply chain, which is at any point the legal owner of the product, needs to put in place the administration necessary to maintain the chain of custody. If any party in the supply chain, who takes legal ownership over the product, does not keep the required records, the chain of custody stops at this point and no claims related to C&S data can be made by parties further downstream. The consequences of a break in the chain of custody are that the fuel supplier will have to use the default values to report the carbon intensity and may have to state that the provenance of their biofuel is 'unknown'.

5.4.2 Responsibilities and procedures

Each company in the chain of custody should:

- Appoint a person or position with overall responsibility for compliance with the chain of custody procedures explained below;

- Have written procedures or work instructions to ensure implementation of the requirements as explained below.

5.4.3 Selling products with C&S data

Records of commercial transactions should enable parties in the supply chain, and the verifier appointed by the obligated party to trace back through the supply chain to verify any C&S claims made.

It is suggested that a company that sells products with C&S data should specify the C&S data on the invoice or on a document to which the invoice refers. The invoice or relevant document should include the following information:

- The name and address of the buyer;
- The date on which the invoice was issued;
- Description of the product – this must correspond to the description of the product given in the input and output records;
- The quantity of the products sold with specific C&S data. If the invoice contains products with different C&S data, these shall be identified separately in such a way that it is clear to which products the C&S data refers.

A party in the chain of custody cannot sell more output with certain C&S data than its sourced input with the same C&S data (taking into account the relevant conversion factor). The periodic inventory of C&S data must not be negative.

5.4.4 Level at which the mass balance should operate

In line with the RED the mass balance approach has to be operated at the level of a site that a company owns/operates, or at a more detailed level of granularity (e.g. tank level). That is, the RED does NOT allow companies to operate one single mass balance (units in = units out) approach over their whole global operation.

A 'site' is defined as 'one geographical location with precise boundaries within which products can be mixed'. In other words, a site is NOT a collection of facilities that are located in different geographical locations, even if that is in the same region. A site can include multiple silos or tanks, for example, as long as they are at the same physical site. Figure 1 presents an example of the Mass Balance system at a site level.

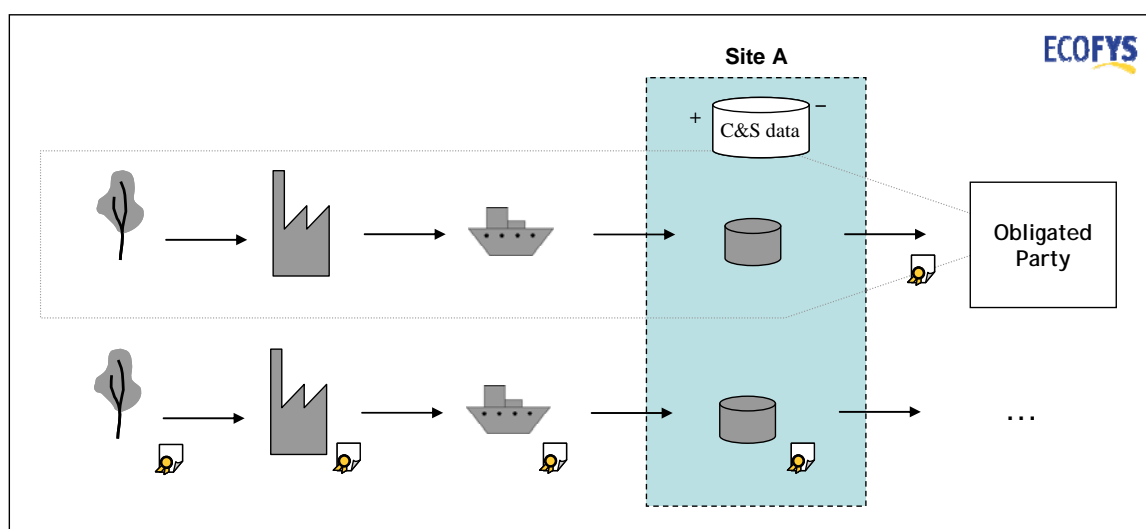


Figure 1 Example of a mass balance system at site level

The certificate represents the flow of C&S data.

5.4.5 Timeframe

It is recommended that parties in the supply chain undertake a periodic inventory of site-level carbon and sustainability data at least on a monthly basis. The periodic inventory of C&S data shall not be negative (i.e. when the periodic inventory is undertaken, parties may not have sold more carbon and sustainability data than they have taken in - see section 5.4.6 below). At the end of a mass balance period, parties should not have more C&S data than they have actual physical feedstock/product. For any transaction, the traded amount of C&S data cannot exceed the traded amount of physical product.

It is acknowledged that due to the way the supply chain currently operates it may be challenging for some parties in the supply chain to conduct a monthly mass balance inventory, particularly at the agricultural end of the supply chain. Therefore the maximum period over which the mass balance has to be achieved under the RTFO can be longer than one month, but must not exceed one year⁵⁷. Note that the one year time period is unlikely to be allowed beyond Year Four of the obligation.

5.4.6 Record keeping

It is suggested that each party in the chain of custody should keep the following records that should concur with the information on

⁵⁷ Parties using a voluntary scheme recognised by the EC for the mass balance should use the mass balance timeframe of that voluntary scheme.

the invoices, to enable C&S data claims to be traced back through the supply chain:

- Input and output records of C&S data. Input records refer to the C&S data of products purchased from a supplier. Output records refer to the C&S data of products sold to a buyer. For each administrative consignment these records should include at least:
 - Invoice reference(s)
 - A description of the physical product to which the C&S data refer
 - The volume of physical input/output to which the C&S data refer
 - The supplying/receiving company
 - Transaction date
 - Any C&S data
- Conversion factor records. These records refer to the conversion factor of inputs to outputs (e.g. rapeseed to rapeseed oil). Each party in the supply chain can maintain records of its own conversion factors. A party may have more than one conversion factor. If no records are kept for the conversion factor the default value for the respective conversion factor must be used. For each conversion factor it must be clear from the records:
 - To which input product it refers
 - To which output product it refers
 - The units in which the conversion factor is expressed
 - The value of the actual conversion factor
 - When the specific conversion factor was valid. The period of validity is one year
 - The conversion factors may also be integrated in the input, output or inventory records as long as the requirements listed here are met
- Periodic inventory of C&S data. These records provide an insight into the balance of C&S data. Besides helping a company to manage its input-output balance these records also assist in the verification of a party's chain of custody records. It is recommended that the period between inventories is no longer than one month and records should include:
 - The inventory of C&S data at the beginning of the respective period (including the carbon intensity of the stock). It must be clearly specified whether this is expressed in input-

equivalents (before conversion factor) or output-equivalents (after conversion factor);

- The volumes of inputs with identical C&S data in the respective period. These volumes must coincide with the input records described above;
- The volume of outputs with identical C&S data in the respective period. These volumes must coincide with the output records described above;
- The conversion factor(s) used in the respective period;
- The inventory of C&S data at the end of the respective period (including the carbon intensity of the stock). It must be clearly specified whether this is expressed in input-equivalents (before conversion factor) or output-equivalents (after conversion factor).

Example formats for the records described above are illustrated in Annex F.

5.4.7 Records to keep of products from unknown origin

When the origin of the inputs is unknown, the only information required in the input record is the product description (e.g. rapeseed or rapeseed oil) and the volume.

5.4.8 Allocation of sustainability information

In passing C&S information through the supply chain, it is permitted to use a mass balance system to freely allocate C&S information to outgoing consignments, as long as the 'set of sustainability characteristics' remains together.

In other words, although consignments with different sustainability information can be physically mixed, the sustainability information cannot be exchanged across different consignments. The 'set of sustainability characteristics' includes all C&S information known about a consignment, for example: feedstock, origin, voluntary scheme, GHG value etc.

For example, if a party has two consignments in a single tank, one of 'rapeseed oil from protected cropland' and the other of 'palm oil from non-protected cropland', the sustainability characteristics could not be swapped between the consignments. It would not be permitted to assign outgoing data as 'rapeseed oil from non-protected cropland', for example.

For the parts of the supply chain where commodities are traded as single feedstocks, outgoing consignments of feedstock must be

sold with feedstock data consistent with that feedstock. For example, if a site contains silos of pure palm oil and pure rapeseed oil, pure palm oil sold as a single feedstock from that site must be sold with palm oil data.

Note that *within a feedstock type* sustainability information can be allocated freely. For example if the site contains a mixture of rapeseed oils from different sources with different sets of sustainability characteristics, it is permitted to freely allocate the set of sustainability information to outgoing consignments of rapeseed oil.

Also note that, while free allocation of sustainability information between consignments of the same feedstock is allowed, each set of sustainability characteristics still needs to be kept together. For example, a party could have two consignments of rapeseed oil with different sustainability characteristics: one consignment of rapeseed oil from cropland that does not meet the 35% minimum GHG-savings threshold, and one consignment of rapeseed oil from highly biodiverse grassland that is grandfathered for the 35% GHG-savings threshold. In such a situation, it would not be permitted to mix the sustainability information of the two consignments, e.g. in order to create a consignment of rapeseed oil from cropland that is grandfathered for the 35% GHG-savings threshold.

In a change to the RTFO for Year Four, for the later part of the supply chain where blended biofuels are traded, feedstock information can be allocated flexibly to outgoing consignments (previously each physical consignment taken out of a consignment had to be supplied with feedstock data which was representative of the actual feedstock mix of the fuel in the consignment – so-called ‘proportionate feedstock reporting’).

Suppliers should note that following RED implementation the proportionate feedstock reporting requirements may continue to apply for fuels that qualify for double counting.

In general, companies should employ a transparent and consistent approach to reporting the proportion of different feedstocks in the fuel that they bring to the market.

5.4.9 Flexible allocation of C&S data over different ‘feedstock-derived products’

Different feedstock-derived products are *different products* that are produced from the *same feedstock* – e.g. sugar and bioethanol are two different types of products that are both produced from the same feedstock, namely sugar cane. In the same way, palm stearin and olein are two different feedstock-derived products from crude palm oil. In addition, EU-spec bioethanol and Brazilian-spec

bioethanol can be considered two different feedstock-derived products.

Flexible allocation of C&S data between different 'feedstock-derived products' that are produced at the same site is permitted.

The following two examples clarify this rule.

Example 1. Flexible allocation of C&S data between sugar and bioethanol produced at the same mill.

'Mill M' produces and sells sugar cane derived products (sugar and bioethanol). It produces equal amounts of sugar and bioethanol from sugar cane. Mill M has two dedicated plantations, of which only one meets the RTFO Biofuel Sustainability Meta-Standard. In total, this mill produces twenty units of sugar cane derived products: ten units of sugar and ten units of bioethanol. The obligated party to which M sells its bioethanol wishes to claim that the ten units of sugar cane bioethanol it put on the market all meet the RTFO Meta-Standard level. This is permitted and the obligated party does not have to ensure that the other sugar cane estate, from which Mill M sources the other 10 units of sugar cane, also meets the RTFO Meta-Standard level. After all, in this example, no more sustainable bioethanol was sold by Mill A, than the amount of sustainable sugar cane it sourced (taking into account relevant conversion factors).

The sugar produced by mill M cannot also be sold with a claim of meeting the RTFO Meta-Standard level, as this would be double counting.

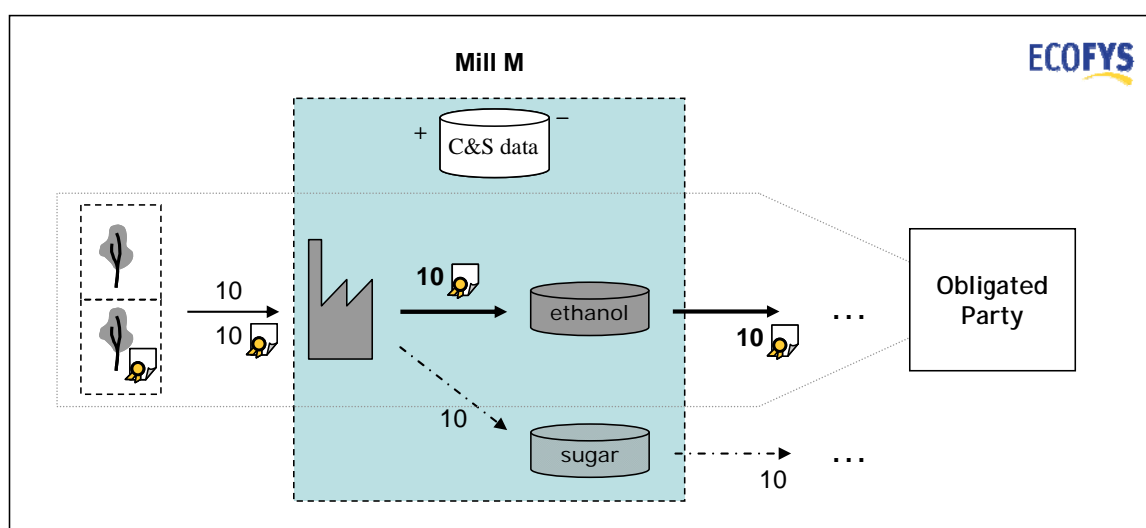
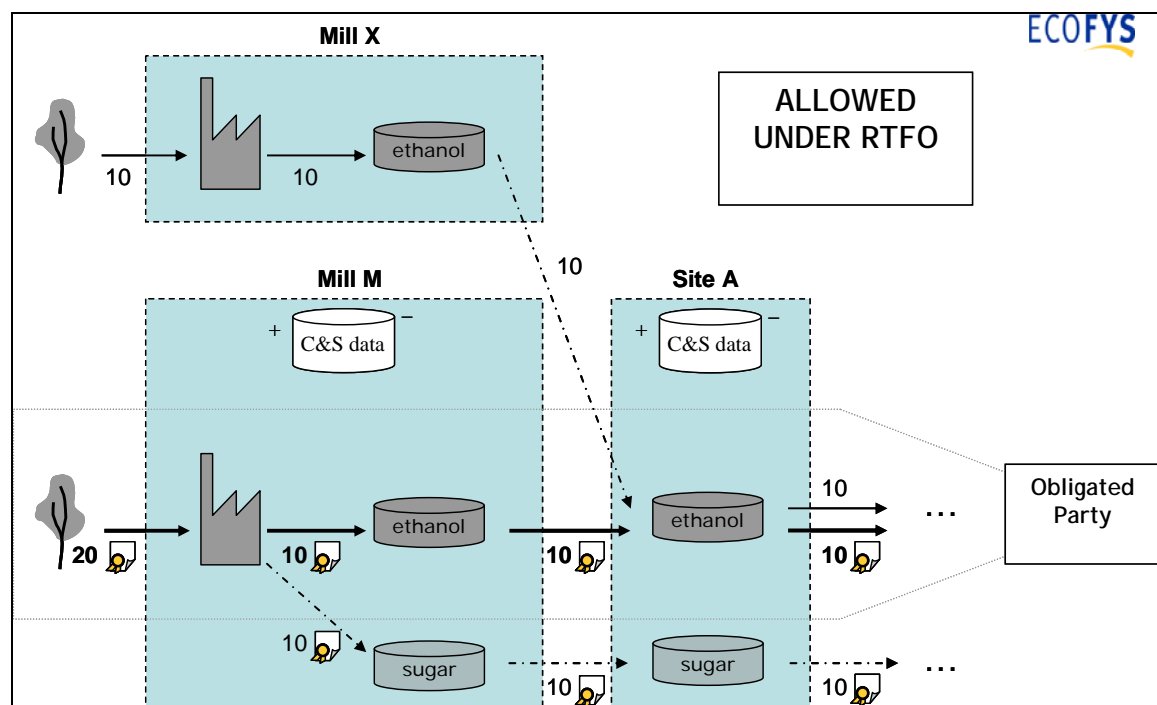


Figure 2 Example of a transfer of C&S data between different feedstock-derived products that is allowed under the RTFO.

The certificate represents the flow of certified products.

Example 2. Allocation of C&S data between sugar and bioethanol produced at different mills.

Company A ('Site A') stores and trades in sugar cane derived products (sugar and bioethanol)⁵⁸. It sources from several sugar cane mills. One of the sugar cane mills ('Mill M') produces equal amounts of sugar and bioethanol from sugar cane. It has a dedicated plantation that meets the RTFO Meta-Standard level. In total, this mill produces twenty units of sustainable sugar cane derived products (ten units of sugar and ten units of bioethanol). Site A also received ten units of sugar cane bioethanol from another mill (Mill X, that does not meet the RTFO Meta-Standard level). Of the total 20 units of bioethanol that Site A sells to the obligated party, only ten can be claimed to meet the RTFO Meta-Standard level. Site A is not permitted to transfer the sustainability claim of the sugar it sourced from Mill M to the bioethanol it sourced from Mill X because such flexible allocation between different feedstock-derived products is only permitted if the different feedstock-derived products were produced at the same site. Otherwise the mass balance would effectively be run over several sites, thereby violating the RTFO requirement that the mass balance is run at the site level.



⁵⁸ This may be a somewhat constructed situation, but it serves to demonstrate the issue that is relevant here.

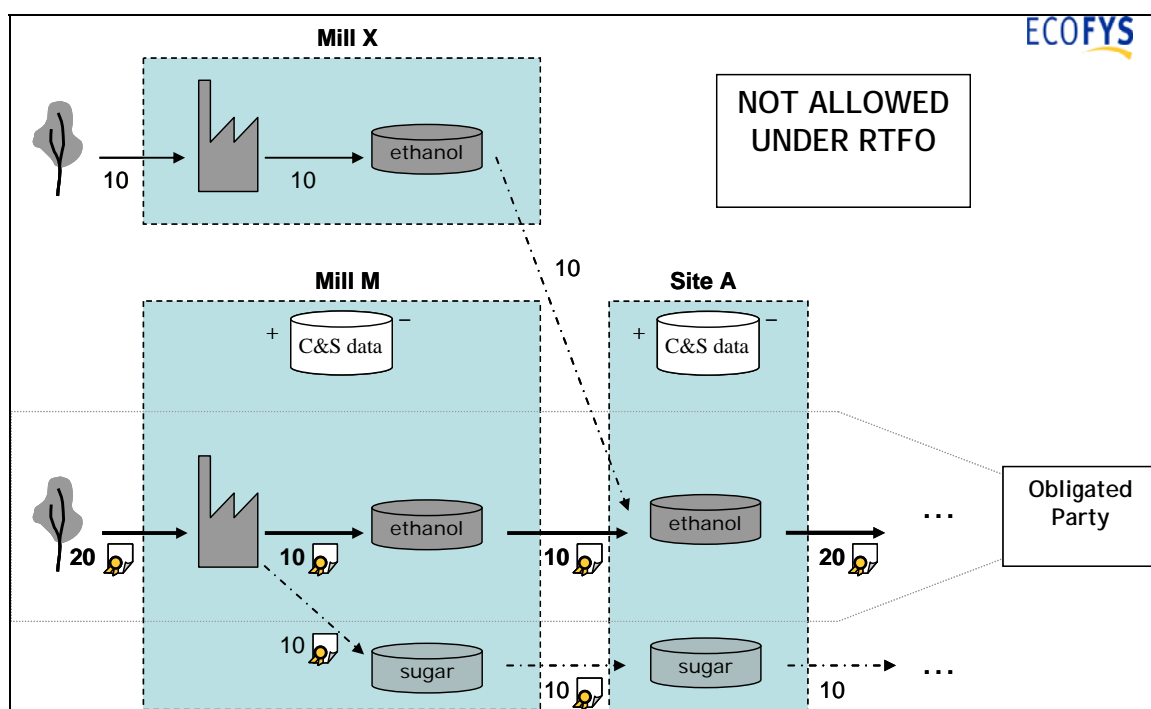


Figure 3 Example of a transfer of C&S data between different feedstock-derived products which are and are not allowed for the RTFO.

The certificate represents the flow of certified products.

5.5 Equivalence trading

'Equivalence trading' refers to the practice under the Common Agricultural Policy of the EU where crops grown under contract for energy use (either grown on set-aside or claiming the EU Energy Aid Payment) can be substituted by other material from within the EU which has not been grown under an energy contract.

Under the RTFO C&S Technical Guidance, the C&S characteristics of the feedstock may be substituted in this exchange. Therefore, the C&S characteristics of the contracted farm, which does not actually deliver the physical feedstock, may be used for C&S reporting.

Note: this practice is in principle a book and claim type chain of custody system, which is not currently an approved system under the RED. As such, the RFA intend to permit the continued use of equivalent trading for Year Four of the RTFO, but to disallow it from full RED implementation. A column has been added to the monthly reporting table to flag where equivalence trading has been used. Such biofuels will not count as being RED-Ready.

5.5.1 Rules for C&S data in the case of equivalence trading

The following requirements must be met to practice C&S data swapping in an equivalence trade:

- All requirements as defined in the Common Agricultural Policy for equivalence trading need to be met.
- Data swapping is only permitted within the same feedstock in an equivalence trade.
- Trade of C&S data through equivalence trading only takes place between the farm providing the data and the first buyer of the feedstock. From the first buyer onwards the trade in C&S data should continue with the certified chain of custody where it exists or through the mass balance approach described in this chapter.
- All the C&S data reported must originate from the same contracted farm (i.e. it is not permitted to use carbon intensity data from one farm and sustainability information from the other). In calculating the carbon intensity of the fuel the default transportation distance should be used.
- A verifiable system is in place at the farm which provides the C&S data to prevent double counting of C&S data. If, for example, the farm is LEAF certified and this is claimed by the biofuel chain through equivalence trading, the LEAF mark cannot be claimed again with the sale of the physical product.

6 Verification of company reporting

This chapter provides guidance on the verification requirements for suppliers who submit Annual C&S Reports as part of the RTFO, and provides examples of good practice to assist with verification procedures.

Further guidance for verifiers is available [online](#).

New guidance is included on key information that must be included in the assurance statement from the verifier to provide greater transparency and to help ensure consistency of verification between obligated parties.

Reports that fail to sufficiently address all of the key information detailed below will not be accepted as providing an adequate level of assurance. **Note this guidance is required to be used for Annual C&S Reports from Year Three of the RTFO due in September 2011.**

6.1 General

In order to provide confidence in the C&S reports of suppliers, information submitted in the Supplier's Annual Report will be subject to independent verification⁵⁹. The RTFO Administrator may impose a civil penalty on any supplier that does not supply the required independent verification.

Information in the Annual Report will include aggregated monthly C&S data, as amended by any variance reports received, and other qualitative information about the operations of the fuel supplier as set out in Chapter 4. The verification is likely to be undertaken through a risk-based sampling approach and therefore not every single piece of data will be checked.

Following verification, the verifier will provide the fuel supplier with a formal limited-assurance opinion (a verification statement) about the quality of the Annual Reporting. The term 'limited-assurance' is

⁵⁹ The term 'verification' used here refers to providing assurance on the claims made by an obligated party in their Annual Report.

defined in the International Standard on Assurance Engagements (ISAE 3000).

It is the responsibility of reporting suppliers to provide an independent assurance providers' opinion on the Annual Report to the RFA by 28 September⁶⁰ after the end of the obligation period which it covers. This opinion must be supplied regardless of the conclusion reached. Organising the verification is the responsibility of the fuel supplier.

6.2 Setting up a system for Carbon and Sustainability reporting

To be able to produce data that is of sufficient quality for reporting, fuel suppliers need to ensure that they and others in their supply chain have effective systems for C&S reporting and obtain and retain sufficient and appropriate evidence to support their C&S reporting.

Fuel suppliers should appoint a single point of contact with responsibility for C&S reporting.

6.2.1 Good practice

It is good practice to:

- Liaise with the supply chain to ensure awareness of the need for co-operation and for a chain of custody;
- Produce data in a manner that is transparent and is as consistent as possible between years (allowing for improvements in method);
- Remove unnecessary complexity from the reporting system;
- Organise internal checks of the data;
- Ensure all people supplying data are aware of the rigour required and that responsibility for supplying the data is allocated;
- Map the data flow within the organisation, such as between spreadsheets;
- Minimise the manual transfer of data;
- Ensure adequate controls around the data;

⁶⁰ The Department for Transport are consulting on introducing an earlier date of 12 August for final verification in their proposals for implementing the RED. Suppliers should be aware that the verification date could move forwards for Year Four.

- Document the system (who does what, when etc.);
- Track data over time to help identify any misstatement.

6.3 Which data will be verified?

There is no requirement to pass physical evidence (such as copies of invoices etc) from farms, processors or other suppliers along the supply chain. The party which generates the carbon and/or sustainability data retains this evidence. In verifying the C&S data reported by a fuel supplier, the verifier may expect to work back up the supply chain to the source data using the chain of custody records. The co-operation of those in the supply chain is therefore vital.

With respect to sustainability data, certificates of benchmarked standards are sufficient proof of compliance with the criteria and indicators of that standard. The verifier would simply need to check that the certificates are valid and the party holds a sufficient quantity to match their reported C&S data. If it is claimed that the RTFO Biofuel Sustainability Meta-Standard is met, documented proof from the checks will be required as evidence. Similarly, documented proof is needed of assessment against gap criteria in the case they are used to claim the Qualifying or RTFO Meta-Standard level.

Other C&S data is subject to verification, for example:

- Carbon data;
- Evidence of Land-use on 1 January 2008;
- Chain of custody records;
- Other information provided in the Annual Report.

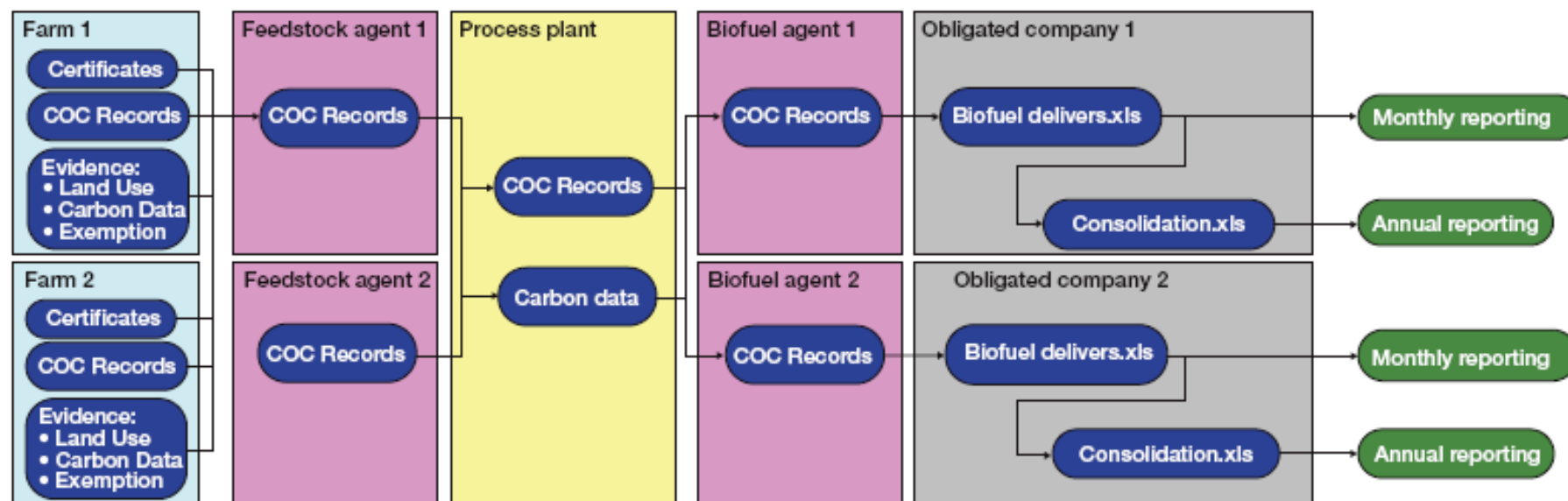
An example of the data flow within a simplified supply chain is shown in Figure 4.

Note that each party keeps chain of custody records, but that evidence does not need to be passed to parties downstream in the chain of custody. Through the chain of custody records, the verifier will be able to trace back to the party that generated the carbon and/or sustainability data to check the evidence.

6.3.1 Good systems reduce the cost of verification

The greater the confidence that can be placed on controls the less effort that needs to be given to verifying the data for the same level of assurance. The cost of verification can, therefore, be reduced if the verifier has confidence in the system that produced

the data. Evidence of the effectiveness of controls can come from internal sources, such as management reviews and internal audits, as well as external audits, for example, of the chain of custody.

Figure 4 Example of the records kept by each party in the supply chain

6.4 How to organise the verification

The fuel supplier is responsible for engaging a verifier approved to carry out a **limited-assurance** engagement of the Annual C&S Report. The term 'limited-assurance' is defined in the International Standard on Assurance Engagements (ISAE 3000).

In selecting a verifier, suppliers may wish to consider the following guidance. For example, the verification body could be required to demonstrate that it:

- Is independent of organisations involved in the production of biofuels;
- Has established and maintains personnel records, which demonstrate that the verification personnel are competent;
- Has effective procedures for the training and recruitment of competent staff (employees and contractors);
- Ensures that the personnel involved in verification are competent for the functions they perform;
- Has systems to monitor the performance of verifiers and reviewers, which are reviewed regularly;
- Keeps up with verification best practice.

The aim of the verification engagement is to provide assurance that the Annual C&S Report is without material misstatement. As such verifiers need to state that nothing has come to their attention to indicate material misstatement, given an appropriate level of investigation. ISAE 3000 provides guidance to verifiers about how they must go about the engagement. It should normally be possible for verifiers to obtain moderate assurance from a site visit to the fuel supplier and telephone interviews along the supply chain.

Verification of the Annual Report will require the fuel supplier to go through the following steps:

- a) Engage a verification body approved to carry out a limited-assurance engagement of the Annual C&S Report as set out in ISAE 3000;
- b) Submit the draft Annual C&S Report to the verifier;
- c) Submit supporting information and evidence held by the fuel supplier;
- d) Host any visits from the verifier;

- e) Respond to any verifier questions;
- f) Correct any material misstatement identified by the verifier;
- g) Submit the verification opinion with the Annual Report.

The verifier will wish to visit the fuel supplier. The verifier will review the consolidation process and meet the person responsible for the submission.

The verifier will work along the supply chain, tracing the data flow and testing controls. The verifier may select a risk-based approach; therefore, not every organisation in the supply chain is likely to be contacted. The exact approach may vary with each verifier and supply chain.

The duration of the verification process may be a number of weeks, particularly if the supply chain is complex or long and responses to information requests from the verifier are delayed. It is recommended that suppliers engage the verifier long before the deadline date for submission of the Annual Report and verification statement to the RFA. The verifier may wish to carry out tests during the year to reduce any end of year bottlenecks.

6.4.1 Good practice

It is good practice to engage a verifier as early as possible in the process to maximise a company's opportunity to learn from the verifier and to help identify any mistakes early on. Common verification practice is for data to be supplied to the verifier in an organised evidence pack. This would be expected to include:

- The draft Annual C&S Report;
- High-level description of the supply chain (as is known, to help the verifier);
- Chain of custody records;
- Contact details of the organisations in the previous stages in the supply chain (at least);
- Calculation spreadsheets (preferably supplied electronically so that verifiers can test the formulae);
- Physical evidence to support qualitative statements which refer to the fuel supplier itself.

All the above information would be needed to verify the data. If not provided in an ordered fashion, the verifier will need to request information, which increases the verification effort required.

6.5 Verifier opinions

The verifier will submit an opinion on the Annual C&S report. The verifier's opinion (also referred to as an 'assurance statement') forms part of the annual reporting requirements set out in Chapter 4.

The verifier will use their experience and judgement to determine if they believe that there may, or may not, be material errors in the Annual Report or the data used to compile monthly reports.

An 'unqualified' opinion for the Annual C&S Report could be worded, for example, as below:

'Nothing has come to our attention to cause us to believe that the data has not been prepared, in all material respects, in accordance with the criteria.'

If there is material misstatement, the opinion could be worded, for example, as below:

'Nothing has come to our attention that causes us to believe that internal control is not effective, in all material respects, with the exception of:

- X
- Y
- Z'

Where it is deemed that there is insufficient evidence to make certified C&S claims, data should be reported as 'unknown'. The data submitted in the Annual Report to the RFA must match the data held by the RFA in the RFA's database (ROS - from suppliers' monthly returns).

It is standard practice for the verifier to submit a report, in addition to the opinion, to the client. It is considered good practice if this report includes information on the overall effectiveness of the system in place to generate C&S data as well as recommendations for improvement. Such information is intended to assist both the RFA and parties submitting verified Annual Reports to understand the process and improve performance. In addition, such information maximises the knowledge transfer of the verifier to the party submitting their verified Annual Reports.

6.6 Further guidance on verification

The Guidance for Verifiers, which adds detail to the information contained in this chapter, is available [online](#). The additional

guidance is aimed at verifiers for the Annual Reports, though it may also be a useful resource for obligated and other parties preparing for verification. The guidance includes:

- An overview of the purpose of verification;
- A description of the assurance process, including the key features of ISAE 3000 and the steps in an assurance engagement for RTFO reports;
- The criteria for undertaking an RTFO assurance engagement;
- The testing procedures that will be required;
- The evidence that should be obtained;
- Details of assurance statement requirements; and
- A description of the competencies for verifiers.

The Guidance for Verifiers was revised in March 2011 to include further guidance on the assurance statement based on the first two years of experience of the RTFO (see section on Assurance Opinions).

This change to the guidance consists of key information that must be included in the assurance statement from the verifier to provide greater transparency and to help ensure consistency of verification between obligated parties. The guidance has been developed with reference to the requirements of the RFA's Technical and Verifiers' Guidance, and the ISAE 3000 standard.

Reports that fail to sufficiently address all of the key information detailed in the section on Assurance Opinions in the Guidance for Verifiers will not be accepted as providing an adequate level of assurance. We expect each of the points listed in the Verifiers Guidance to be appropriately addressed in verifiers' statements. Where evidence is not available for a particular point, we expect a statement explaining the reasons for its absence. **Note this guidance applies to Annual C&S Reports from Year Three of the RTFO due in September 2011.**

Annex A Guidance on sustainability standards

Key changes to this section:

- Updated benchmark results:
 - Bonsucro (formerly BSI) downgraded from RTFO Social Meta-Standard to Qualifying Social level.
 - RSB meets both the Qualifying Environmental and Social Standard levels.
 - ISCC does not meet either the Qualifying Environmental or Social Standard levels.
- Added process for inclusion of EC-recognised voluntary schemes.
- It is recommended that requests for future benchmarks of standards should go to the EC for harmonisation across the EU. Any future assessments by the EC of voluntary feedstock standards against the RED criteria will take precedence over RFA assessments against the RED.

A.1 Benchmarked standards

A.1.1 Benchmarks against the RTFO Meta-Standard

A selection of existing standards have been benchmarked against the RTFO Biofuel Sustainability Meta-Standard. Those that meet an acceptable level of sustainability are called Qualifying Standards. The detailed results of the benchmarking exercise are available on the [RFA website](#). Any standard that is listed can be reported under the RTFO.

A.1.2 Benchmarks against the RED

The RFA has also carried out an initial benchmark of existing Qualifying Standards against the mandatory RED biodiversity and carbon stock criteria (see Table 12). As these criteria are mandatory, the standards have been scored either a 'Yes' implying

a full compliance, or a 'No' implying a non-compliance in these benchmarks. This differs from the benchmarks against the RTFO criteria where standards can also be scored a 'Partial' compliance. For full benchmark results, see [RFA website](#).

Note the RFA benchmarks of standards against the RED were conducted for indicative purposes before all details of the RED and Communications were published and therefore do not guarantee that these voluntary schemes will pass assessment by the EC.

The EC will undertake formal assessments of voluntary schemes that apply to them to judge whether they deem the schemes appropriate to demonstrate compliance with the RED sustainability requirements, including the GHG and land-use criteria (biodiversity, carbon stocks and peatlands), the chain of custody and audit quality requirements. The RFA understands that voluntary schemes will be recognised by the EC for a specific scope, e.g. certain feedstocks, geographies, one or more of the land-use criteria, the GHG criterion and the possibility to calculate actual values, and/or the mass balance.

Those voluntary schemes that are recognised by the EC will automatically be recognised in the RTFO, for the same scope recognised by the EC⁶¹. EC-recognised schemes are able to be used to demonstrate 'RED-Ready' biofuel in Year Four of the RTFO for the RED sustainability criteria for which they have received a positive assessment by the EC.

The process and timing for the inclusion of EC Decisions on voluntary schemes in the RTFO is dependent on whether an indicative RED assessment has already been undertaken by the RFA. Table 11 shows the process for inclusion of EC-recognised voluntary schemes in the RTFO.

It is also possible that other EU Member States will assess and accept voluntary schemes that have not been recognised by the EC. The UK is not obliged to accept standards approved by other Member States, although the RFA recognises that it is in the interest of companies for the same schemes to be approved across the EU. However, it is feasible that different Member States may have made different assessments of the same scheme and in this circumstance it would be unclear which Member State's assessment should be followed.

⁶¹ It is a requirement of the RED that all Member States recognise any voluntary schemes that are recognised by the EC.

Table 11 Process for inclusion of EC-recognised voluntary schemes in the RTFO

RFA indicative RED benchmark	EC Decision	Process and timing for inclusion in RTFO
Positive	Positive	Standard continues to be used to demonstrate RED-Ready biofuel
Positive	Negative	Phase out RED-Readiness – only applies until end of Year Four RED-Ready period
Negative	Positive	Standard demonstrates RED-Ready biofuel from date of EC Decision ⁶²
Negative	Negative	Does not demonstrate RED-Ready biofuel
Not assessed	Positive	Standard demonstrates RED-Ready biofuel from date of EC Decision ⁶²
Not assessed	Negative	Does not demonstrate RED-Ready biofuel

To ensure that the assessment of different standards is consistent under the RTFO and to ensure the quality of the schemes reported under the RTFO, the RTFO Administrator will **not** automatically accept assessments of schemes by other Member States. If the RTFO Administrator has assessed a standard, this assessment will take precedence under the RTFO over an assessment by another Member State. However, the RFA considers that voluntary schemes should, in most circumstances, be assessed by the EC, rather than by Member States: to encourage harmonisation across the EU, the RTFO Administrator recommends that standards should apply for recognition by the EC.

Note that all Member States are obliged to put in place a 'national system' for parties to use to demonstrate that their biofuels or bioliquids comply with the RED. This guidance represents the UK's 'RED-Ready' national system for biofuels. Obligated parties wishing to claim RTFCs for biofuels used in the UK will have to comply with the requirements of the UK national system by reporting information under the RTFO. Compliance with another Member State's national system in itself may not provide sufficient evidence to demonstrate under the RTFO that the biofuel is RED-Ready. The Department for Transport will consider the status of other Member State's national schemes as necessary.

⁶² Subject to parties in the supply chain being audited against the version of the voluntary scheme that the EC Decision refers to.

A.1.3 Benchmark results against the RTFO Meta-Standard and RED

Table 12 List of benchmarked standards

The table illustrates whether the standard is an environmental or social Qualifying Standard, and whether the standard meets the RED criteria on biodiversity and carbon stocks. **N.B. some standards have developed additional *optional* criteria for RED/EU market access which affect 'RED-readiness'. Suppliers need to determine whether these optional criteria were met to claim the 'incl. RED criteria' version.** Notes on standards are below the table. Schemes marked with '*' have been benchmarked by the European Commission.

Benchmarked standard	Indicative RED Biodiversity. Criterion?	Indicative RED Carbon Stocks Criterion?	RTFO Environmental. Meta-Standard?	RTFO Social Meta-Standard?	Qualifying Environmental Standard?	Qualifying Social Standard?	Meets norm for audit quality?
Standards that meet Qualifying Standard level or RED sustainability criteria							
Abengoa RED Bioenergy Sustainability Assurance *	Yes	Yes	-	-	-	-	-
Biomass Biofuels voluntary scheme *	Yes	Yes	-	-	-	-	-
Bonsucro (formerly Better Sugar Cane Initiative, BSI)	-	-	No	No	No	Yes	Yes
Bonsucro (formerly Better Sugar Cane Initiative, BSI) incl. RED criteria *	Yes	Yes	No	No	No	Yes	Yes
Forest Stewardship Council (FSC)	No	No	No	No	Yes	No	Yes
Genesis Quality Assurance (Genesis QA)	Yes	No	No	No	Yes	No	Yes
Greenergy Brazilian Bioethanol ver. prog. *	Yes	Yes	-	-	-	-	-
International Sustainability and Carbon Certification (ISCC) *	Yes	Yes	No	No	No	No	No
Linking Environment And Farming Marque (LEAF)	No	No	No	No	Yes	No	Yes
Red Tractor (formerly Assured Combinable Crops Scheme, ACCS)	Yes	No	No	No	Yes	No	Yes

Benchmarked standard	Indicative RED Biodiversity. Criterion?	Indicative RED Carbon Stocks Criterion?	RTFO Environmental. Meta-Standard?	RTFO Social Meta-Standard?	Qualifying Environmental Standard?	Qualifying Social Standard?	Meets norm for audit quality?
Round Table on Responsible Soy (RTRS)	No	No	No	Yes	Yes	Yes	-
Round Table on Responsible Soy EU RED (RTRS) *	Yes	Yes	No	Yes	Yes	Yes	-
Roundtable on Sustainable Biofuels	-	-	No	No	Yes	Yes	Yes
Roundtable on Sustainable Biofuels incl. RED criteria *	Yes	Yes	No	No	Yes	Yes	Yes
Roundtable on Sustainable Palm Oil (RSPO)	Yes	No	No	No	Yes	Yes	Yes
Roundtable on Sustainable Palm Oil (RSPO) – GreenPalm	No	No	No	No	Yes	Yes	Yes
Sustainable Agriculture Network/Rainforest Alliance (SAN/RA)	Yes	No	No	No	Yes	Yes	Yes
Standards that do not meet Qualifying Standard level							
Basel criteria for soy (Basel)	-	-	No	No	Yes	Yes	-
FEDIOL	-	-	No	No	No	No	-
Qualität und Sicherheit (QuS)	-	-	No	No	No	No	-
GlobalGAP	-	-	No	No	No	No	-
International Federation of Organic Agriculture Movements (IFOAM)	-	-	No	No	No	No	-
ProTerra	-	-	No	No	No	No	-
Scottish Quality Crops (SQC)	-	-	No	No	No	No	Yes
Social Accountability 8000 (SA8000)	-	-	No	No	No	No	No

Notes on standards

A) The benchmark result relates to the BSI Production Standard published in July 2010 (before the standard changed its name to Bonsucro). The updated BSI benchmark resulted in a downgrade from the previous result of RTFO Social Meta-Standard to Qualifying Social Standard, since it is no longer a requirement of certification to meet all criteria (80% of non-core criteria now need to be met). The RFA therefore considers that there is not sufficient guarantee that

certified produce would meet all the social criteria of the RTFO Meta-Standard, and therefore Bonsucro is considered to meet only the Qualifying Social Standard level. Note that BSI was formally renamed Bonsucro in December 2010.

B) Approximately 10% of LEAF Marque certificates are issued by non-accredited certification bodies. LEAF can only be reported as a Qualifying Environmental Standard if the certificate has been issued by an accredited body.

C) ACCS was renamed Red Tractor Farm Assurance Combinable Crops and Sugar Beet scheme in autumn 2010.

D) GreenPalm is an RSPO certificate trading system which operates on a book and claim basis by assigning RSPO certificates purchased by economic operators down the supply chain to consignments of palm oil/palm oil biodiesel. As book and claim systems will not be permitted after full RED implementation, an option to report 'RSPO-GreenPalm' has been added under the RTFO to distinguish book and claim RSPO-certified palm oil (which is not RED-ready) from non-book and claim RSPO-certified palm oil (which is RED-ready for the RED biodiversity criteria).

E) RTRS launched its Standard for Responsible Soy Production v1.0 in June 2010. The benchmark result, however, refers to the Field Testing version of the standard, published in May 2009. This benchmark focussed on the standard's criteria and indicators only, as the scheme had not developed its audit and certification process at that time. The RFA will benchmark the audit and certification process as soon as it is available and in the meantime RTRS can be reported as a qualifying standard.

F) The SAN standard contains all relevant social criteria to meet the full Social RTFO Meta-Standard level. However, for certification to be awarded, a plantation must meet 14 critical criteria and at least 80% of the other criteria. The 14 critical criteria do not cover all RTFO social criteria. The RFA therefore considers that there is not sufficient guarantee that certified produce would meet all the social criteria of the RTFO Meta-Standard, and therefore SAN/RA is considered to meet only the Qualifying Social Standard level.

Note: this benchmark result refers to the SAN standard and its addendum which were published in April 2009. The addendum includes additional sustainability criteria and indicators for a number of key biofuel feedstocks (sugar cane, oil palm, soy and sunflower).

G) The Basel criteria for soy is a set of principles and does not include audit and certification procedures. To report Basel and meet the Qualifying Standard level, suppliers must be able to demonstrate successful independent audit against the Basel criteria. The audit must meet the requirements of the RFA's Norm for Audit Quality (see section A.5 in Annex A), with the exception of criteria 2 (Management of the audit programme) and 7 (Accreditation process for Accreditation Bodies). Minor musts in the norm should be treated as recommendations only.

H) FEDIOL's Code of Practice serves as voluntary industry guidelines for quality management, food safety and control in the value chain of the oilseed processing industry. It is not intended as a sustainability standard or certification scheme and (sustainable) feedstock production is not part of the code's scope.

I) The German Qualität und Sicherheit (QuS) guidelines have a strong focus on food safety, quality assurance and traceability. The main focus of the standard is on fertiliser and pesticide use. It is not intended as a sustainability standard and contains mainly recommendations and relatively few mandatory requirements.

J) Although GlobalGAP did not meet the requirements for either an Environmental or Social Qualifying Standard, it was found to come very close to meeting the requirements of a Qualifying Environmental Standard.

K) IFOAM itself is a meta-standard; it focuses on accrediting other standards for organic agriculture according to the general requirements set out by IFOAM. Unfortunately, several important criteria are only included as recommendations in IFOAM, thereby giving no guarantees of compliance. While these have not been benchmarked, some of the organic standards accredited by IFOAM may actually include stricter criteria and could therefore meet the Qualifying Standard level.

L) The ProTerra criteria and indicators alone suggest that the standard could meet the Qualifying Standard level. However, most of the criteria included in ProTerra are not mandatory for certification with no set deadline for meeting them. Therefore, ProTerra certification currently does not guarantee that these important criteria are complied with. Furthermore, the ProTerra standard does not offer an independent accreditation process, and as such does not guarantee the audit quality. It is therefore not currently a Qualifying Standard.

M) Scottish Quality Crops currently does not meet the criteria required to be either an Environmental or Social Qualifying Standard. The standard is directed more towards food safety than broader sustainability for the purposes of feedstock cultivation for bioenergy.

N) The Social Accountability 8000 standard provides a good coverage of worker rights and working relationship concerns, but does not cover land rights or community relations sufficiently well for it to meet the Social Qualifying Standard level.

A.2 Short term solutions for standards in development

The RFA recognises that a number of benchmarked standards are still under development. To offer a short-term solution for these cases e.g. where a standard is not fully operational in a particular country, the RTFO Administrator accepts as an alternative, for the purposes of reporting under the RTFO, successful independent third party audit against the standard criteria and indicators. This is on the condition that the feedstock producer (or justified equivalent) is a member of the standard or equivalent.

The independent third party audits must meet the requirements of the RFA's Norm for Audit Quality (see section A.5), with the exception of criteria 2 (Management of the audit programme) and 7 (Accreditation process for Accreditation Bodies). Minor musts in the norm should be treated as recommendations only.

Note the RFA **strongly recommends** that once a certification scheme becomes fully operational for a particular feedstock, parties

should aim to move away from the short-term solution and look to operate within the certification scheme as soon as possible.

A.3 Benchmarking additional standards

In the interests of EU harmonisation, as a general rule it is expected that further benchmarking of standards against the RED requirements should now be conducted by the EC. The RTFO Administrator may consider benchmarking an individual scheme on a case by case basis if there is a strong business case for doing so, based on the demand to use the scheme in the UK and whether the scheme is already undergoing assessment by the EC. The RTFO Administrator will recommend to any such scheme that they apply directly to the EC for recognition.

A company or standard owner may make a request to the RTFO Administrator to benchmark an additional certification scheme, or a new version of a certification scheme that has previously been benchmarked, which the RTFO Administrator will consider. The request should include the following information⁶³:

- The formal description of the standard;
- The most recent version of the standard's criteria and indicators;
- The most recent version of the standard's procedures and requirements for the auditing/certification process; and
- The most recent version of the standard's accreditation procedures and requirements for certification bodies.

The RTFO Administrator will acknowledge the receipt of the request within ten working days and publish an announcement on its website that a benchmark will be performed for this certification scheme. The RTFO Administrator will then begin the technical review of the certification scheme (i.e. benchmark of sustainability Principles and Criteria, Audit quality).

An overview of the procedure for benchmarking of additional standards is available on the [RFA website](#).

The RTFO Administrator will keep the need to benchmark individual schemes against the Meta-Standard under review.

⁶³ The RTFO Administrator will give due consideration as to whether a benchmark of the requested standard or certification scheme is appropriate, but is not obliged to conduct a full benchmark. Appropriate standards or certification schemes are likely to be third party sustainability certification schemes that can be used to certify feedstocks of relevance to the biofuels market.

In the interests of consistency in the UK, the RTFO Administrator will engage with Ofgem on voluntary schemes used under the forthcoming Renewables Obligation sustainability requirements for bioliquids.

A.4 The norm for Qualifying Standards

The following norms are used for conducting the benchmarks of sustainability principles and criteria against the RTFO Sustainable Biofuel Meta-Standard.

To become a Qualifying Environmental Standard the following criteria requirements must be met:

- Full compliance with all criteria referring to compliance with national legislation (2.1, 3.1, 4.1, 5.1);
- On all principles one 'partial compliance' criterion is permitted per principle, with a maximum of three in total.

Full compliance with a criterion is only awarded if the RTFO criterion is met by a corresponding mandatory criterion in the benchmarked standard.

To become a Qualifying Social Standard the following criteria requirements must be met:

- Of the 11 minimum requirement criteria of principle 6, seven must be fully complied with;
- On principle 7 on land right issues and community relations, one partial compliance is permitted.

Full compliance with a criterion is only awarded if the RTFO criterion is met by a corresponding mandatory criterion in the benchmarked standard.

Note that the benchmark also considers how a certification decision is made within a scheme. For a criterion to be fully met, the certification process must guarantee that the criteria required to meet the Qualifying Standard or full RTFO Meta-Standard level are all met for certification to be awarded, or at least that there is a provision for all relevant criteria to be met over a specified period of time.

A.5 The norm for Audit Quality

A norm for audit quality has also been developed (Table 13). The norm is based on seven criteria, with each criterion assigned a conformance level of either 'major must' or 'minor must'.

For a standard to be accepted as a Qualifying Standard it must be in compliance with all major musts. The minor musts are optional, but highly recommended criteria.

The existing Qualifying Standards have been benchmarked against the norm for audit quality, the results of which are detailed in Annex D. Existing Qualifying Standards have a period of 12 months to address any non-conformances.

For new standards, if the standard is not compliant with all major musts when being benchmarked for inclusion in the RTFO, then it will not be accepted as a Qualifying Standard. In this case, the standard can address the non-conformances and re-apply to have the audit quality benchmarked for inclusion in the RTFO.

Further details on the norm can be found at the [RFA website](#).

Note on consistency with the RED requirements on audit:

The EC 'Communication on practical implementation' provides specific guidance on auditing. Comparison of the EC guidance with the RTFO norm for audit quality shows that the two are broadly consistent; although there are some minor differences (e.g. the provision of a documentation management system is listed in the EC Communication, but not explicit in the RTFO norm). A formal benchmark of existing Qualifying Standards against the EC guidelines has not been conducted at this stage by the RFA, but a high level review suggests that the inclusion of the additional requirements from the EC Communication in the RTFO norm would not materially impact the existing benchmark results.

The RFA proposes that the RTFO Administrator looks to update the RTFO norm for audit quality, incorporating the EC's guidance, in time for full RED implementation.

Table 13 Norm for Audit Quality

Criterion	Norm	Conformance
Certification		
1. Requirements for Certification Bodies (CBs)	ISO Guide 65: 1996, ISO 17021: 2006, or justified equivalents.	Major must
Audit		
2. Management of the audit programme	ISO 19011: 2002, or justified equivalent.	Minor must
3. Audit frequency	Once every 5 years for a full certification audit and once a year for a surveillance audit.	Major must
4. Audit competency	ISO 19011: 2002, or justified equivalent. Specific requirements relevant to the product that the CB is certifying should be added as training requirements where appropriate.	Major must
5. Stakeholder consultation	To include a range of relevant stakeholders.	Minor must
6. Public summaries of the certification audit	To include overall findings of the certification audit, any details of non-compliance and any issues identified during the stakeholder consultation. Information should be available in both English and the relevant local language(s), if applicable.	Minor must
Accreditation		
7. Accreditation process for Accreditation Bodies (ABs)	'Commitment to comply' with ISO 17011: 2004, or justified equivalent, independently peer-reviewed and approved by an auditor that is recognised by either ISEAL or the IAF.	Major must

A.6 Procedure for downgrading a standard

Should an existing Qualifying Standard be amended and found not to meet the norm for audit quality or sustainability criteria, the standard owner will be informed by the RTFO Administrator and given a period of 12 months to address the non-conformance. Failure to do so will result in the standard no longer being accepted as a Qualifying Standard or full RTFO Meta-Standard in the RTFO. The RFA reserves the right to disqualify standards at shorter notice for serious non-conformances.

Annex B Eligible by-products

Key changes to eligible by-products:

- Highlighted that current list of RTFO by-products does not relate directly to feedstocks that are likely to be counted as wastes and residues after full RED implementation.
- For the current list of RTFO by-products, tallow is split into two types:
 - 'Tallow (except category 3)' – refers to category 1 or 2 tallow or uncategorised tallow (i.e. tallow from outside the EU).
 - 'Tallow (category 3 or unknown category)'
- Process included for how to deal with new by-products.
- Introduction of a new 'byproduct-level carbon default'

The definition of RTFO by-products is a feedstock that represents less than 10% of the farm or factory gate value.

The biofuel producer purchasing these by-products will have little influence on the sustainability of the production process for the original product. For example, a biofuel producer buying tallow will have little or no influence on the standards applied to rearing the cattle.

Note that the RED does not use such a classification and instead refers to this type of product as 'wastes' and 'residues'. The implementation of the definition of wastes and residues under the RTFO will be a matter for DfT. As such, the RFA will continue to use the current definition of 'by-products' for Year Four of the RTFO. The approach is intended to be updated for full RED implementation. **Inclusion in the current list of by-products under the RTFO does not guarantee that a feedstock will be classed as a waste or residue after full RED implementation.**

Note that under the EU RED wastes and residues are set to be 'double counted' towards Member States' renewable transport targets. This implies that one litre of biofuel produced from the above by-products may earn two RTFCs when the RED is implemented into UK legislation. There is **no double counting** of by-products in Year Four of the RTFO before RED implementation.

B.1 List of by-products

For the purpose of the Technical Guidance, the following products are considered by-products:

- Corn oil;
- Cheese by-products;
- Manure;
- Molasses;
- Municipal solid waste;
- Sulphite liquor;
- Tallow (except category 3);
- Tallow (category 3 or unknown category);
- Used cooking oil.

For Year 4 of the RTFO tallow has been split into two types as there is only a carbon default available in RED Annex V for 'waste vegetable or animal oil biodiesel' which has the footnote: 'Not including animal oil produced from animal by-products classified as category 3 material in accordance with Regulation (EC) No. 1774/2002'. Therefore 'tallow (except category 3) has been assigned the RED carbon default of 14 and 'tallow (category 3 or unknown category)' has been assigned the RFA developed carbon default of 18 (and will not be considered 'RED-ready' unless actual data is used for the entire supply chain).

B.2 Process for new by-products

As the current RTFO definition of by-products is unlikely to be used after full RED implementation, the RFA will not add new feedstocks to the current list of by-products.

Suppliers may report a new feedstock as a by-product if they have verifiable evidence that the feedstock meets the RTFO definition of a by-product: 'a feedstock that represents less than 10% of the farm or factory gate value'. The evidence should be assessed by a verifier and included as part of the suppliers' Annual Report to the RFA.

Similarly, the RFA will not calculate a new default value for new by-products, but instead will allow suppliers (for Year Four of the RTFO) to report the most conservative current default value for a by-product. The most conservative current default value for a by-product in the RTFO is for molasses (61 gCO₂e/MJ). Actual data may also be reported but will need to be supplied for the entire fuel chain.

This approach is different to other new feedstocks which will have to report the conservative fuel level defaults (93 gCO₂e/MJ for biodiesel and 115 gCO₂e/MJ ethanol), but aims to recognise the generally lower direct GHG impact of by-products.

Note that once the RED is fully implemented, it is likely that suppliers will have to use actual GHG values for *any* feedstocks for which the RED does not contain default values.

Annex C RTFO Biofuel Sustainability Meta- Standard criteria and indicators

No changes are made to the RTFO Biofuel Sustainability Meta-Standard criteria.

The RTFO Administrator will keep the Meta-Standard under review and will consider whether it would be appropriate in the future to update the Meta-Standard criteria, for example, to be in line with the non-mandatory environmental and social issues mentioned in the RED, at such a time when more is known about the detail of these issues.

C.1 Environmental criteria and indicators

The tables below illustrate the environmental sustainability criteria and indicators for the RTFO Biofuel Sustainability Meta-Standard. All criteria and indicators must be met for the RTFO Biofuel Sustainability Meta-Standard. The 'recommended' criteria and indicators listed at the bottom of each table are not required for the RTFO Biofuel Sustainability Meta-Standard, but are considered good practice. They indicate where the RTFO Biofuel Sustainability Meta-Standard should develop in the long term.

The RFA will keep the criteria and indicators for the RTFO Biofuel Sustainability Meta-Standard under review to ensure their continuing relevance. The status of mandatory and recommended criteria will also be kept under review.

Table 14 Environmental criteria and indicators for the RTFO Biofuel Sustainability Meta-Standard

Principle 1: CARBON CONSERVATION	Biomass production will not destroy or damage large above or below ground carbon stocks
Criterion	Indicators
1.1 Preservation of above and below ground carbon stocks (reference date 01-01-2008).	<p>Evidence that biomass production has not caused direct land-use change with a carbon payback time exceeding 10 years⁶⁴.</p> <p>Evidence that the biomass production unit has not been established on soils with a large risk of significant soil stored carbon losses such as forest lands, peat lands, mangroves, wetlands and certain grasslands.</p>

Principle 2: BIODIVERSITY CONSERVATION	Biomass production will not lead to the destruction or damage of high biodiversity areas
Criterion	Indicators
2.1 Compliance with national laws and regulations relevant to biomass production in the area and surroundings where biomass production takes place.	<p>Evidence of compliance with national and local laws and regulations with respect to:</p> <ul style="list-style-type: none"> • Environmental Impact Assessment • Land ownership and land-use rights; • Forest and plantation management; • Protected and gazetted areas; • Nature and wild life conservation; • Land-use planning; • National rules resulting from the adoption of CBD⁶⁵ and CITES⁶⁶. <p>The company should prove that:</p> <ul style="list-style-type: none"> • It is familiar with relevant national and local legislation • It complies with these legislations • It remains informed on changes in legislation

⁶⁴ Guidance on the 'carbon pay back time' is given in Annex H.

⁶⁵ <http://www.biodiv.org/com/convention/convention.shtml>

⁶⁶ <http://www.cites.org/eng/disc/text.shtml>

Principle 2: BIODIVERSITY CONSERVATION	Biomass production will not lead to the destruction or damage of high biodiversity areas
Criterion	Indicators
2.2 No conversion of high biodiversity areas after 1 January 2008.	<p>Evidence that production does not take place in gazetted areas.</p> <p>Evidence that production does not take place in areas with one or more HCV areas⁶⁷:</p> <ul style="list-style-type: none"> • HCV 1, 2, 3 relating to important ecosystems and species; • HCV 4, relating to important ecosystem services, especially in vulnerable areas; • HCV 5, 6, relating to community livelihoods and cultural values. <p>Evidence that production does not take place in any areas of high biodiversity.</p>
2.3 The status of rare, threatened or endangered species and high conservation value habitats, if any, that exist in the production site or that could be affected by it, shall be identified and their conservation taken into account in management plans and operations.	<p>Documentation of the status of rare, threatened or endangered species (resident, migratory or otherwise) and high conservation value habitats in and around the production site.</p> <p>Documented and implemented management plan on how to avoid damage to or disturbance of the above mentioned species and habitats.</p>

Recommendation only:

Criterion:

Preservation and/or improvement of surrounding landscape.

⁶⁷ The definition of the 6 High Conservation Values can be found at <http://www.hcvnetwork.org>

Currently no comprehensive maps exist which define HCV areas. For many areas it will therefore still be necessary to assess whether HCVs are present or not.

The following initiatives are helpful in defining areas with one or more HCVs:

- Conservation International – Biodiversity Hotspots
- Birdlife international – Important Bird Areas
- The WWF G200 Eco-regions: the regions classified ‘vulnerable’ or ‘critical/endangered’.
- European High Nature Value Farmland

Indicators:

Representative samples of existing ecosystems within the landscape shall be protected in their natural state and recorded on maps, appropriate to the scale and intensity of operations and the uniqueness of the affected resources.

Principle 3: SOIL CONSERVATION	Biomass production does not lead to soil degradation
Criterion	Indicators
3.1 Compliance with national laws and regulations relevant to soil degradation and soil management.	<p>Evidence of compliance with national and local laws and regulations with respect to:</p> <ul style="list-style-type: none"> • Environmental Impact Assessment; • Waste storage and handling; • Pesticides and agro-chemicals; • Fertiliser; • Soil erosion. <p>Compliance with the Stockholm convention (list of forbidden pesticides).</p> <p>The company should prove that:</p> <ul style="list-style-type: none"> • It is familiar with relevant national and local legislation; • It complies with these legislations; • It remains informed on changes in legislation.

Principle 3: SOIL CONSERVATION	Biomass production does not lead to soil degradation
Criterion	Indicators
<p>3.2 Application of good agricultural practices with respect to:</p> <ul style="list-style-type: none"> • Prevention and control of erosion; • Maintaining and improving soil nutrient balance; • Maintaining and improving soil organic matter; • Maintaining and improving soil pH; • Maintaining and improving soil structure; • Maintaining and improving soil biodiversity; • Prevention of salinisation. 	<p>Documentation of soil management plan aimed at sustainable soil management, erosion prevention and erosion control.</p> <p>Annual documentation of applied good agricultural practices with respect to⁶⁸:</p> <ul style="list-style-type: none"> • Prevention and control of erosion; • Maintaining and improving soil nutrient balance; • Maintaining and improving soil organic matter; • Maintaining and improving soil pH; • Maintaining and improving soil structure; • Maintaining and improving soil biodiversity; • Prevention of salinisation.

Recommendation only

Criterion:

The use of agricultural by-products does not jeopardize the function of local uses of the by-products, soil organic matter or soil nutrients balance.

Indicators:

- Documentation that the use of by-products does not occur at the expense of important traditional uses (such as fodder, natural fertiliser, material, local fuel etc.) unless documentation is available that similar or better alternatives are available and are applied.

⁶⁸ Recommendations only

Records of annual measurements of:

- Soil loss in tonnes soil/ha/y
- N,P,K balance
- SOM and pH in top soil
- Soil salts content

- Documentation that the use of by-products does not occur at the expense of the soil nutrient balance or soil organic matter balance.

Principle 4: SUSTAINABLE WATER USE	Biomass production does not lead to the contamination or depletion of water sources
Criterion	Indicators
4.1 Compliance with national laws and regulations relevant to contamination and depletion of water sources.	<p>Evidence of compliance with national and local laws and regulations with respect to:</p> <ul style="list-style-type: none"> • Environmental Impact Assessment; • Waste storage and handling; • Pesticides and agro-chemicals; • Fertiliser; • Irrigation and water usage. <p>The company should prove that:</p> <ul style="list-style-type: none"> • It is familiar with relevant national and local legislation • It complies with these legislations • It remains informed on changes in legislation.
4.2 Application of good agricultural practices to reduce water usage and to maintain and improve water quality.	<p>Documentation of water management plan aimed at sustainable water use and prevention of water pollution.</p> <p>Annual documentation of applied good agricultural practices with respect to:</p> <ul style="list-style-type: none"> • Efficient water usage; • Responsible use of agro-chemicals; • Waste discharge.

Recommendations only

Records of annual measurements of:

- Agrochemical inputs (input/ha/y), such as fertilisers and pesticides (specified per agrochemical);
- Water sources used (litres/ha/y);
- BOD level of water on and nearby biomass production and processing.

Principle 5: AIR QUALITY	Biomass production does not lead to air pollution
Criterion	Indicators
5.1 Compliance with national laws and regulations relevant to air emissions and burning practices.	<p>Evidence of compliance with national and local laws and regulations with respect to:</p> <ul style="list-style-type: none"> • Environmental Impact Assessment; • Air emissions; • Waste management; • Burning practices. <p>The company should prove that:</p> <ul style="list-style-type: none"> • It is familiar with relevant national and local legislation; • It complies with these legislations; • It remains informed on changes in legislation.
5.2 No burning as part of land clearing or waste disposal.	Evidence that no burning occurs as part of land clearing or waste disposal, except in specific situations such as described in the ASEAN guidelines on zero burning or other respected good agricultural practices.

List of protected areas referred to in criterion 2.2

UNESCO World Heritage Sites⁶⁹;

IUCN List of Protected Areas categories I, II, III and IV⁷⁰, according to the list available from 2003⁷¹ or more up to date lists or national data;

RAMSAR sites (wetlands under the Convention on Wetlands)⁷², according to the available list⁷³ of more up to date lists or national data.

⁶⁹ <http://whc.unesco.org/en/list>

⁷⁰ IUCN defines a protected area as: an area of land and/or sea especially dedicated to the protection and maintenance of biological diversity, and of natural and associated cultural resources, and managed through legal or other effective means, and subdivides protected areas into six categories: I a) Strict nature reserve/wilderness protection area; I b) Wilderness area; II) National park; III) Natural monument; IV) Habitat/Species management area; V) Protected landscape/seascape; VI) Managed resource protected area. Source: www.wwf.de/fi_leadadmin/fm-wwf/pdf-alt/waelder/WWF-position_Protected_Areas_03.pdf

⁷¹ http://www.unep-wcmc.org/wdpa/unlist/2003_UN_LIST.pdf

⁷² <http://www.ramsar.org/>

C.2 Social criteria and indicators

Table 15 illustrates the social criteria and indicators for the RTFO Biofuel Sustainability Meta-Standard. The RFA will keep these criteria and indicators under review to ensure their continuing relevance. The status of mandatory and recommended criteria will also be kept under review.

Table 15 Social criteria and indicators for the RTFO Biofuel Sustainability Meta-Standard

All the listed criteria and indicators must be met for the RTFO Biofuel Social Sustainability Meta-Standard.

Principle 6: WORKERS RIGHTS	Biomass production does not adversely affect workers rights and working relationships
Criteria	Indicators
6.1 Compliance with national law on working conditions and workers rights.	Certification applicant must comply with all national law concerning working conditions and workers rights.
6.2 Contracts	Certification applicant must supply all categories of employees (incl. temporary workers) with a legal contract in which the criteria below are registered.
6.3 Provision of information.	Certification applicant must show evidence that all workers are informed about their rights (incl. bargaining rights).
6.4 Subcontracting	When labour is contracted or subcontracted to provide services for the certification applicant, the certification applicant must demonstrate that the subcontractor provides its services under the same environmental, social and labour conditions as required for this standard.
6.5 Freedom of association and right to collective bargaining.	Certification applicant must guarantee the rights of workers to organise and negotiate their working conditions (as established in ILO conventions 87 and 98). Workers exercising this right must not be discriminated against or suffer repercussions.

⁷³ http://www.ramsar.org/index_list.htm

Principle 6: WORKERS RIGHTS	Biomass production does not adversely affect workers rights and working relationships
Criteria	Indicators
6.6 Child labour	Certification applicant must guarantee that no children below the age of 15 are employed. Children are allowed to work on family farms if not interfering with children's educational, moral, social and physical development (the workday, inclusive of school and transport time, to be a maximum of 10 hours).
6.7 Young workers	The work carried out shall not be hazardous or dangerous to the health and safety of young workers (age 15 -17). It shall also not jeopardise their educational, moral, social and physical development.
6.8 Health and safety	All certification applicants must meet basic requirements including potable drinking water, clean latrines or toilettes, a clean place to eat, adequate protective equipment and access to adequate and accessible (physically and financially) medical care. Accommodation, where provided, shall be clean, safe, and meet the basic needs of the workers.
	All certification applicants shall ensure that workers have received regular health and safety training appropriate to the work that they perform.
	All certification applicants shall identify and inform workers of hazards, and adopt preventive measures to minimise hazards in the workplace and maintain records of accidents.
6.9 Wages/ compensation	Wageworkers must be paid wages at least equivalent to the legal national minimum wage or the relevant industry standard, whichever is higher.
	Workers must be paid in cash, or in a form that is convenient to them and regularly.

Principle 6: WORKERS RIGHTS	Biomass production does not adversely affect workers rights and working relationships
Criteria	Indicators
6.10 Discrimination	In accordance with ILO Conventions 100 and 111, there must be no discrimination (distinction, exclusion, or preference) practised that denies or impairs equality of opportunity, conditions, or treatment based on individual characteristics and group membership or association like: race, caste, national origin, religion, disability, gender, sexual orientation, union membership, political affiliation, age, marital status, those with HIV/AIDS, seasonal, migrant and temporary workers.
6.11 Forced Labour	Standards shall require that the certification applicant not engage in or support forced labour including bonded labour as defined by ILO conventions 29 and 105. The company must not retain any part of workers' salary, benefits, property, or documents in order to force workers to remain on the farm. The company must also refrain from any form of physical or psychological measure requiring workers to remain employed on the farm. Spouses and children of contracted workers should not be required to work on the farm.

Principle 7: LAND RIGHTS	Biomass production does not adversely affect existing land rights and community relations
Criteria	Indicators
7.1 Land right issues	The right to use the land can be demonstrated and does not diminish the legal or customary rights of other users and respects important areas for local people.
7.2 Consultation and communication with local stakeholders	Procedures are in place to consult and communicate with local populations and interest groups on plans and activities that may negatively affect the legal or customary rights, property, resources, or livelihoods of local peoples.

List of recommended only social criteria

These recommended criteria and indicators are not required for the RTFO Biofuel Sustainability Meta-Standard, but are considered good practice.

Criteria: Wages and compensation

- The certification applicant must pay the workers for unproductive time due to conditions beyond their control.
- Housing and other benefits shall not be deducted from the minimum wage/or relevant industry wage as an in kind payment without the expressed permission of the worker concerned.
- Where the certification applicant uses pay by production (piecework) system, the established pay rate must permit the worker to earn the minimum wage or relevant industry average (whichever is higher) during normal working hours and under normal operating conditions.

Criteria: Working hours

- Usual working hours shall not exceed eight hours a day and 48 hours a week.
- Workers must have a minimum of 24 hours rest for every seven day period.
- Overtime during seasonal peaks is allowed, but needs to be voluntary, and should be paid at a premium rate. Workers should have adequate breaks (every 6 h, 30 minutes). For heavy or dangerous work shorter periods and longer breaks should be allowed.

Criteria: Growers and mills should deal fairly with smallholders and other local businesses

- Current and past prices for produce are publicly available.
- Pricing mechanisms for produce, inputs and services are documented.
- Evidence is available that all parties understand the contractual agreements they enter into, and that contracts are fair, legal and transparent and that all costs, fees and levies are explained and agreed in advance.
- Agreed payments are made in a timely manner.

Annex D Benchmarks of standards

Key changes to detailed benchmark results:

- Benchmarks of updated versions of Bonsucro
- New benchmark results for RSB and ISCC

This detailed benchmark result tables from this annex have been removed from this Technical Guidance document to enable ease of reading and updating (but are considered to form part of the Guidance). They can be found on the [RFA website](#).

Annex E Methodology for projects with low risk of iLUC

No changes are made to this Annex for Year Four.

In follow up to the Gallagher Review recommendation to identify demonstrably sustainable biofuels, the RFA commissioned work to develop a methodology that can objectively distinguish biofuels from energy crops with a low risk of indirect effects. The [full report](#) contains details of six real life case studies.

The methodology developed, detailed in this section, aims to enable individual companies to initiate projects that can demonstrate that the feedstock cultivated, and hence the resultant biofuel, has a low risk of causing indirect land-use change.

This section sets out the framework of the methodology, the criteria that a project should comply with to claim that the project has a low risk of causing iLUC, and how compliance with these criteria could be demonstrated and verified.

The methodology is one of potentially a number that could demonstrate biofuels with a low risk of iLUC. The methodology is designed to empower companies who wish to develop new biofuel projects, to do so in a way that can demonstrate a low risk of iLUC.

The RFA included this methodology in this Technical Guidance as an option for fuels supplied under the RTFO from April 2010.

Parties wishing to use this methodology are encouraged to contact the RTFO Administrator to register the project and, where necessary to discuss aspects of the proposed methodology.

Companies are required to report whether they have undertaken specified measures to improve the sustainability of biofuels in their annual report, including projects to minimise risks of iLUC in line with this methodology.

E.1 Scope

Focus on indirect effects from energy crops

The scope of the methodology is limited to minimising the risk of unwanted indirect effects from biofuel production from energy crops. For biofuel production to be sustainable unwanted direct effects also have to be prevented (e.g. loss of biodiversity) but this has been the focus of other work and is the key focus of the RTFO Meta-Standard. Mechanisms for direct effects are more easily assessed and monitored as they can be directly observed at the location of production; existing mechanisms such as certification schemes already exist for this purpose. Preventing unwanted direct effects will therefore always be necessary alongside minimising the risk of unwanted indirect effects. This methodology focuses on indirect effects only. Furthermore, this methodology focuses on biofuels from energy crops. The RFA has undertaken separate work on the indirect effects of biofuels from residues and wastes. The report on this work can be found on the [RFA website](#).

a) Focus on three types of project-level approaches

In line with the case studies, the methodology focuses on three main approaches:

- i) The use of land without current (and future) provisioning services⁷⁴.
 - E.g. oil palm on 'unused'⁷⁵ Imperata grassland
- ii) Increasing land productivity through integration with non-bioenergy-feedstock systems
 - E.g. increasing cattle density through integration with sugar cane
- iii) Increasing the land productivity of existing bioenergy-feedstock systems
 - E.g. increasing the yields of existing sugar cane plantations

⁷⁴ The Millennium Ecosystem Assessment distinguishes four categories of ecosystem services: provisioning services, regulation services, cultural services and supporting services. Provisioning services are defined as harvestable goods such as fish, timber, bush meat, genetic material, etc (Commission for Environmental Assessment, 2006).

⁷⁵ The term 'unused' land is intended to signify land that is unused from an agricultural perspective but it is recognised that land is unlikely to ever be truly unused. Defining unused land is considered in the section on next steps.

The methodology thereby takes a project-level approach, in which a low risk of indirect effects can be claimed by individual production units if certain requirements are met⁷⁶.

b) Focus on the period up to 2020

The methodology proposed here is primarily focussed on the obligation period of the EU RED. That is the period until 2020. This is relevant in discussions on the time period over which the proposed solutions must be effective in terms of minimising the risk of unwanted effects.

E.2 Mitigation criterion for unwanted indirect effects

Indirect effects of additional biofuel feedstock production are the result of a displacement of existing production on land that was already in use for other purposes. For example, existing palm oil production that was previously used for the food sector and is now used for biodiesel production⁷⁷, or land previously used for cattle that is now used for sugar cane production for bioethanol.

Displacement of existing production on land that is already in use for other purposes is therefore at the heart of the concept of indirect effects. Preventing displacement, by realising additional production instead of displacing existing production, is therefore at the heart of the solution to minimise the risk of indirect effects.

The proposed criterion therefore is:

Additional production has been realised without displacing existing provisioning services of the land.

⁷⁶ The term 'project-level' is used to refer to a specific activity or set of activities under the control of single party – it does not necessarily imply a biofuel only 'project' as some fuel chains such as soy or palm oil do not necessarily fit in such an easily identifiable and vertically integrated 'biofuel' project.

⁷⁷ Note that different indirect effects may result from this. For example, production is increased elsewhere potentially leading to LUC, or consumption in other sectors may reduce (e.g. reduced food consumption).

E.3 Demonstrating compliance: baseline, additionality and registration

The above criterion states that additional production must be realised to prevent displacement effects. To be able to demonstrate compliance with this criterion the following is required:

- a) Determine the **baseline production** levels of the project area. The increased production levels will be compared to this baseline after implementation of the project activity. The increase in production levels above the baseline is eligible for crediting.
- b) Determine whether the project activity is **additional**, i.e. that in absence of the biofuel feedstock demand the project activity would not have been implemented during the crediting period⁷⁸.
- c) The project must be **registered** with the RTFO Administrator.

E.3.1 Setting the baseline

Two options exist for setting the baseline production levels:

- a) **Static baseline** in which the baseline production levels are set equal to the current production levels.
- b) **Dynamic baseline** in which the baseline production levels change over time, e.g. by taking into account business-as-usual yield changes.

The table below provides guidance on how the baseline can be set depending on the project type and the whether the baseline is static or dynamic.

⁷⁸ For a definition of the crediting period, see E.5.2.

Table 16 Guidance on how to set the baseline

A distinction is made for when the baseline is static or dynamic.

Project type	Static baseline	Dynamic baseline
The use of land without provisioning services	Zero The land currently provides no provisioning services.	Zero The additionality test must demonstrate that the land would not be taken into production in the crediting period.
Increasing the land productivity of existing bioenergy-feedstock systems	Current production levels of existing bioenergy feedstock system (yield) based on a multi-year average, OR; Production levels that would be achieved with BAU practices. In case of rotational systems, the production levels are averaged to a per annum basis.	Projected production levels of existing bioenergy feedstock system (yields) based on historic yield trend line, OR; Production levels that would be achieved with BAU practices. In case of rotational systems, the production levels are averaged to a per annum basis.
Increasing land productivity through integration with non-bioenergy-feedstock systems	Current production levels of existing non-bioenergy feedstock system (yield) based on a multi-year average, OR; Production levels that would be achieved with BAU practices. In case of rotational systems, the production levels are averaged to a per annum basis.	Projected production levels of existing non-bioenergy feedstock system (yields) based on historic yield trendline, OR; Production levels that would be achieved with BAU practices. In case of rotational systems, the production levels are averaged to a per annum basis.

E.3.2 Proving additionality

To prevent displacement effects, the project activity that increases production levels must be additional. To demonstrate such additionality for the three different types of solutions, the following would be needed:

- The use of land without provisioning services: demonstrate that in absence of the biofuel feedstock demand, land with certain characteristics would not have been used for the supply of other provisioning services (i.e. it would not have been taken into production)⁷⁹. For example, for the oil palm case study in Indonesia, this could be land that lies outside the area destined for development by the Indonesian government. Because the land is classified as forest land by the government, it would be very difficult to obtain a permit.
- Increasing the land productivity of existing bioenergy-feedstock systems: demonstrate that in the absence of the biofuel feedstock demand, the yield increasing measure (e.g. drip irrigation) would not have been implemented.
- Increasing land productivity through integration with non-bioenergy-feedstock systems: demonstrate that in the absence of the biofuel feedstock demand, the integration model (e.g. sugar cane-cattle) would not have been implemented.

Several methods can be used to demonstrate additionality of the project activity. These include:

- **Regulatory Surplus Analysis** demonstrating that the project activity is not a requirement of existing law or regulation.
- **Common Practice Analysis** demonstrating that the new project activity is not common practice in the relevant sector in the relevant region.
- **Barrier Analysis** demonstrating that one or more barriers exist that prevent the implementation of the project activity in absence of the project.

Regulatory Surplus Analysis

The regulatory surplus analysis must demonstrate that the proposed activity is not already required by existing law or

⁷⁹ To gain a reliable insight in the actual provisioning services of an area, local stakeholder consultation will always be needed. One could not rely only on secondary data sources such as national land classifications. Also, the fact that the land is not used at a particular point in time does not mean the land has no provisioning services. The land may be used in a rotational scheme with long fallow periods.

legislation. If the project activity is already required by existing law or legislation, it is not additional.

Common Practice Analysis

The common practice analysis assesses to what extent similar project activities have already been implemented or are currently underway in the same sector in the relevant geographical area. Other projects that are registered as having a low risk of indirect effects are not to be included in this analysis, i.e. these projects are not treated as common practice projects in the common practice analysis of later projects.

If similar activities are identified, then these must be compared with the proposed project to assess whether there are essential differences between the proposed activity and the existing activities. If differences exist it must be demonstrated that these differences explain why the existing activities did not face the barriers being faced by the proposed project activity. If this can be demonstrated, the proposed project activity can still be considered additional.

Barrier analysis

In most carbon emission-based schemes, a barrier analysis is performed to demonstrate additionality. The concept is that the project should demonstrate that barriers exist to the implementation of the project because of which the project is unlikely to be implemented in the baseline scenario. Barriers can be financial (e.g. the project is less economic than alternatives), technical (e.g. lack of availability of the technology in the region), but can also be of another nature (e.g. institutional, organisational or customary barriers – see the case studies for examples). Note the case studies in the [full report](#) showed that barriers do indeed exist for all the cases reviewed. They also showed that often these barriers are not of an economic nature.

Demonstrating additionality and transaction costs

The RFA recognises that a potential issue with the additionality tests is the potentially high transaction costs. There are at least two methodological choices that have a large impact on these transaction costs:

- a) The required additionality tests. At least two options exist:
 - iv) Regulatory Surplus Analysis + Common Practice Analysis
 - v) Regulatory Surplus Analysis + Common Practice Analysis + Barrier Analysis

- b) The level at which the additionality tests are performed. Again, at least two options exist:
 - vi) One barrier analysis required for each individual project: e.g. for each sugar cane-cattle integration project in Brazil.
 - vii) One barrier analysis is required for a certain project type in a certain region: e.g. one barrier analysis would be performed for projects that integrate sugar cane with cattle in (a certain region of) Brazil. If this barrier analysis shows such a project to be additional, then all such project in (a certain region of) Brazil would be considered additional, without the need for each individual project to do its own barrier analysis. Of course, compliance with the displacement criterion (i.e. no displacement of provisioning services) must still be validated for each individual project. For example, existing milk or beef production levels must be maintained. Also, compliance with any sustainability criteria on direct impacts (e.g. biodiversity or carbon stocks) will still have to be verified for each individual project.

In the choice between the above options a trade-off will have to be made between transaction costs and a potential erroneous conclusion on the additionality of an individual project.

Parties are encouraged to contact the RFA to discuss any issues and work together to develop a pragmatic yet robust approach to additionality for individual projects.

E.4 Verification

For companies to be able to make a credible claim on the low risk of indirect effects of their biofuels, verification will be required. What exactly would need to be verified to be able to make such claims, is described in this section. The next section describes the claims that could be made.

- **Before the project is implemented:** verification of additionality and the baseline. This happens only once.
- **After the project is implemented:** verification of continued compliance with the criterion that the original provisioning services of the land are not displaced (during the crediting period). This differs for the three solution types.
- For the unused land option, all production is additional. This means only the actual production levels have to be monitored to ensure no more produce is claimed than is actually

produced on the project site. Note that this is common practice for all certification schemes.

- For the integration with non-bioenergy-feedstock systems, the provisioning services in the baseline scenario must be monitored to validate that they are maintained (e.g. milk production levels before project implementation, potentially increased by an annual percentage in the baseline scenario).
- For the increased productivity of existing bioenergy-feedstock systems, the realised production levels must be monitored for validation. The 'additional production without displacing the existing provisioning services of the land' then equals the realised production levels minus the production levels of the baseline scenario.

E.5 Claims

E.5.1 The quantity of product for which a claim can be made

What are the claims that can be made for projects of the three different approaches?

- a) The use of land without current provisioning services: all production from the land could be claimed to have a low risk of indirect effects.
- b) Integration with non-bioenergy-feedstock systems: all production of energy feedstock could be claimed to have a low risk of indirect effects (provided that baseline production levels of the non-bioenergy feedstock level are maintained).
- c) Increasing the land productivity of existing bioenergy-feedstock systems: all production of bioenergy feedstock above the baseline can be claimed to have a low risk of indirect effects.

E.5.2 The crediting period

The crediting period is the finite length of time during which the project's claim of low indirect risks is valid, e.g. 5 or 10 years. The crediting period can be renewed, but this requires a new assessment of additionality and the baseline.

Box: Comparison with the RED bonus for degraded land

The RED contains a GHG-bonus of 29 gCO₂e/MJ biofuel if biomass is obtained from restored degraded land. For this the land must meet the following conditions:

- Was not in use for agriculture or any other activity in January 2008: and
- Falls into one of the following categories:
 - Severely degraded land, including land that was formerly in agricultural use;
 - Heavily contaminated land.

These categories are defined further in the RED and further guidance still will be given by the EC following a Comitology process.

In comparison with the methodological framework discussed here, the RED degraded land provision would be a subset of the first approach: 'the use of land without current provisioning services'. Thereby the RED could be said to take 'degraded soil conditions' as a proxy for additionality. The approach discussed here allows companies to show other barriers than soil-conditions of the land to demonstrate such additionality. In addition, the RED does not contain provisions that award increases in land productivity, analogous to the second and third approach discussed here.

E.6 Summary of the methodology

The table below summarises the methodology for the three different approaches. It summarises how additionality can be demonstrated, how the baseline can be established, what monitoring is required, and what claim can be made.

Table 17 Summary of the methodology

	Land without provisioning services	Integration with non-bioenergy system	Increased productivity of existing bioenergy feedstock system
Displacement criterion	Additional production has been realised without displacing existing provisioning services of the land		
Demonstrating additionality	Demonstrate the project activity that increases feedstock production is additional: i.e. in absence of the bioenergy feedstock demand the measure would not have been implemented during the crediting period.		
	i.e. the land would not have been taken into production.	i.e. the integration model would not have been implemented.	i.e. the yield increasing measure would not have been implemented.
Setting the baseline	Zero (land previously unused)	Business as usual (BAU) production levels of non-bioenergy system (e.g. milk or beef)	BAU production levels of existing bioenergy system
Monitoring	Monitoring of realised bioenergy feedstock production levels	Monitoring that baseline production levels of non-bioenergy feedstock are maintained	Monitoring of realised bioenergy feedstock production levels
Claim that can be made	All realised production has a low risk of indirect effects	All realised bioenergy feedstock production has a low risk of indirect effects	The additional production ('realised production' minus 'baseline production') has a low risk of indirect effects

Annex F Example records for chain of custody

The following column has been added in the relevant example chain of custody tables (see Chapter 3, Monthly report for further explanation of the new column):

- Equivalence trading

Table 18 Example of an output record from a farm⁸⁰ supplying certified rapeseed to crusher C1

Order No.	Transaction date	Receiving Company	Quantity (tonne)	Product	Country of Origin	NUTS2 compliant region	Standard	Land-use on 1 Jan 2008	Crop yield (t/ha)	Nitrogen fertiliser (kg/ha)	Equivalence trading
22001	15-4-2008	C1	1,000	Rapeseed	UK	Y	LEAF	Cropland – non-protected	3.0	180	N

⁸⁰ Note: a farmer (or any other supply chain actor) has the option of passing either raw data or a calculated carbon intensity figure along the chain. In this example the farmer has chosen to provide raw data for crop yield and nitrogen fertiliser application rate – the oilseed crusher must then use default values for the remaining inputs to the carbon intensity calculation.

Table 19 Example of an input record from a rapeseed crusher

This crusher takes in certified rapeseed from farm F1 and F2 and non-certified rapeseed from farm F3.

Order No.	Transaction date	Supplying company	Quantity (tonne)	Product	Country of Origin	NUTS2 compliant region	Standard	Land-use on 1 Jan 2008	Carbon intensity (gCO ₂ e/MJ)	Equivalence trading
22001	15-4-2008	F1	1,000	Rapeseed	UK	Y	LEAF	Cropland – non-protected	29.3	N
22002	15-4-2008	F2	1,000	Rapeseed	UK	Y	LEAF	Cropland – non-protected	29.3	N
22001	15-4-2008	F3	1,000	Rapeseed	UK	Y	-	Cropland – non-protected	29.3	N

Table 20 Example record of crusher conversion factor

Name conversion factor	Rapeseed to rapeseed oil
Input	Rapeseed
Output	Rapeseed oil
Unit	kg rapeseed oil / kg rapeseed
Value	0.40
Valid from	1-1-2008
Valid until	1-6-2008

Table 21 Example of an output record from a crusher

This crusher supplies certified rapeseed oil to biofuel producer B (RSO = rapeseed oil).

Order Number	Transaction date	Receiving Company	Quantity (tonne)	Product	Country of Origin	NUTS2 compliant region	Standard	Land-use on 1 Jan 2008	Carbon intensity (gCO ₂ e/MJ)	Equivalence trading
23001	20-4-2008	B	400	RSO	UK	Y	LEAF	Cropland – non-protected	32	N
23002	20-4-2008	B	400	RSO	UK	Y	-	Cropland – non-protected	32	N

Table 22 Example of an input record from a biofuel producer

This producer takes in certified rapeseed oil from crusher C1.

Order Number	Transaction date	Supplying company	Quantity (tonne)	Product	Country of Origin	NUTS2 compliant region	Standard	Land-use on 1 Jan 2008	Carbon intensity (g CO ₂ e/tonne)	Equivalence trading
23001	20-4-2008	C1	400	RSO	UK	Y	LEAF	Cropland – non-protected	32	N
23002	20-4-2008	C1	400	RSO	UK	Y	-	Cropland – non-protected	32	N

Table 23 Example of an inventory record of C&S data for crusher C1

Product	Country of Origin	NUTS2 compliant region	Standard	Land-use on 1 Jan 2008	Carbon intensity (gCO ₂ e/MJ)	Inventory (tonne) 15-4-2008	Input (tonne)	Output (tonne)	Inventory (tonne) 15-5-2008	Equivalence trading
OSR	UK	Y	LEAF	Cropland – non-protected	32	1,000	800	400	1,400	N
OSR	Romania	N	-	Cropland – non-protected	32	2,000	0	0	2,000	N
OSR	UK	Y	-	Cropland – non-protected	32	0	400	400	0	N

Table 24 Example of an input record from biofuel company B

Company B takes in several consignments of vegetable oil (CPO = Crude Palm Oil).

Order Number	Transaction date	Supplying company	Quantity (tonne)	Product	Country of Origin	NUTS2 compliant region	Standard	Land-use on 1 Jan 2008	Carbon intensity (gCO ₂ e/MJ)	Equivalence trading
22001	20-4-2008	C1	1,200	RSO	UK	Y	LEAF	Cropland – non-protected	42.5	N
22002	20-4-2008	C1	4,800	RSO	Unknown	Unknown	-	Unknown	42.5	-
22005	20-4-2008	C2	400	CPO	Malaysia	N/A	RSPO	Cropland – non-protected	42.5	-
22006	20-4-2008	C2	600	CPO	Malaysia	N/A	-	Unknown	42.5	-

Table 25 Example of an output record from biofuel company B

Biofuel company B supplies 2,000 tonnes biodiesel to oil major X, of which 400 tonnes meet a reportable standard.

Order No.	Transaction period	Receiving company	Quantity (tonne)	Fuel type	Feedstock	Biofuel production process	Country of Origin	NUTS2 compliant region	Standard	Land-use on 1 Jan 2008	Carbon intensity (gCO ₂ e/MJ)	Plant in operation on 23 Jan 2008?	Equivalence trading
33001	4-2008	X	300	Biodiesel	RSO	-	UK	Y	LEAF	Cropland – non-protected	52	Yes	N
33002	4-2008	X	1,400	Biodiesel	RSO	-	Unknown	Unknown	-	Unknown	52	Yes	-
33005	4-2008	X	100	Biodiesel	CPO	No methane capture	Malaysia	N/A	RSPO	Cropland – non-protected	68	Yes	-
33006	4-2008	X	200	Biodiesel	CPO	Unknown	Unknown	N/A	-	Unknown	68	Yes	-

Table 26 Example of an input record from oil major X

Oil major X receives 2,000 tonnes biodiesel from biodiesel producer B, of which 400 tonnes report a standard.

Order Number	Transaction period	Supplying company	Quantity (tonne)	Fuel type	Feedstock	Biofuel production process	Country of Origin	NUTS2 compliant region	Standard	Land-use on 1 Jan 2008	Carbon intensity (g CO ₂ e / tonne)	Plant in operation on 23 Jan 2008?	Equivalence trading
33001	4-2008	B	300	Biodiesel	RSO	-	UK	Y	LEAF	Cropland – non-protected	52	Yes	N
33002	4-2008	B	1,400	Biodiesel	RSO	-	Unknown	Unknown	-	Unknown	52	Yes	-
33005	4-2008	B	100	Biodiesel	CPO	No methane capture	Malaysia	N/A	RSPO	Cropland – non-protected	68	Yes	-
33006	4-2008	B	200	Biodiesel	CPO	Unknown	Unknown	N/A	-	Unknown	68	Yes	-

Annex G Assessing carbon intensity and calculating direct GHG saving

This Annex summarises how to assess the carbon intensity of an administrative consignment of biofuel in order to submit carbon data for monthly reports.

Key changes to this section:

- New rules for the removal of the “conservative factor”
- Updated default input data to be in line with the values published by BioGrace on the EU Transparency platform

The carbon intensity of a consignment of biofuel can be assessed by:

- Collecting information about the way in which it was produced in order to calculate a ‘known’ carbon intensity; or
- Selecting an appropriate ‘default value’ or set of ‘disaggregated default values’ based on qualitative information about the fuel.

It should be noted that **in order for a consignment to be considered ‘RED-ready’**, there are specific conditions under which default values should not be reported as the carbon intensity of a consignment:

- When emissions from LUC are greater than zero, in order for a consignment to be RED-ready, a calculation of the emissions from LUC should also be added to the default value (i.e. unknown LUC cannot be reported).
- When the feedstock is from a NUTS2 region in which the emissions from cultivation (as outlined in Member State NUTS2 reports accepted by the Commission) are greater than the disaggregated defaults for cultivation in the RED, in order for a consignment to be RED-ready, neither the high level feedstock/process default value or the disaggregated default for cultivation can be used. Actual or regional data must be used for the cultivation stage. However, the disaggregated defaults for processing and transport can still be used.
- If no carbon default is available for RED Annex V, actual data must be reported for the entire fuel chain to claim RED-readiness (i.e. even where the RFA has provided a default).

G.1 Calculating and reporting a 'known' carbon intensity

Information about activities which take place during the production of a biofuel can be used to calculate its carbon intensity. The information collected could be either:

- Quantitative 'actual data' about inputs used during the production of a biofuel – for example, that 9,000 MJ of natural gas are used for every tonne of bioethanol produced; or
- Qualitative data about processes used during the production of a biofuel – for example, that the biofuel plant uses biomass to provide heat and power. This qualitative data also enables the use of 'selected defaults' – these are default values which are either defined by the RFA or established by companies themselves or other stakeholders and made publicly available.

Parties who wish to calculate a known carbon intensity value should use the procedures set out in *Technical Guidance Part Two. Carbon Reporting - Default values and fuel chains*.

Table 27 Focus for data collection

Step in the supply chain	Focus for data collection
Crop production	<ul style="list-style-type: none"> • Nitrogen fertiliser application rate • Crop yield • Fuel consumption for cultivation
Feedstock and liquid fuel transport	<ul style="list-style-type: none"> • Transport distances
Conversion – e.g. biofuel conversion or oilseed crushing	<ul style="list-style-type: none"> • Yield⁸¹ • Fuel type and demand • Electricity demand • Co-product yield and energy content

There is a large amount of data which companies could collect in order to derive a known carbon intensity. However, only a small number of data points can have a significant influence on the final carbon intensity of a biofuel. Table 27 highlights the data points which have the most influence on final carbon intensity and which should be the focus of data collection efforts.

⁸¹ i.e. tonnes of product (e.g. biodiesel) per tonne of input (e.g. rapeseed oil)

G.2 Reporting using the fuel chain default values

When detailed information about how a biofuel was produced is not available, a default value must be used in order to report its carbon intensity. There are three different types of fuel chain default values, the use of which depends on what is known about:

- The fuel type,
- The feedstock used to produce the fuel, and
- In some cases, the process by which the fuel was produced (e.g. a process in which a natural gas CHP plant is used at the biofuel plant).

Fuel level defaults are used where the feedstock and process (if relevant) are unknown, feedstock level defaults are used where the feedstock is known but the process (if relevant) is unknown, and process level defaults (if relevant) are used where all three categories of information are known. This is summarised in Table 28 together with a cross reference to the relevant default value table. The appropriate default value selected from the tables below is then reported in a supplier's monthly C&S report.

Table 28 Cross-reference to relevant default value table

Feedstock	Process (if relevant)	Type of default value	Default value table
Unknown	Unknown	Fuel	Table 29
Known	Unknown	Feedstock	Table 30
Known	Known	Process	Table 31

N.B. Fuel chain default values are defined 'conservatively' (i.e. a higher carbon intensity) in order to provide an incentive for companies to collect more data. The use of conservative default values means that the values in the tables below should not be interpreted as being an accurate assessment of the GHG saving potential of biofuels. It should be noted, however, that the default values do not take into account potential indirect land-use change

impacts. It should also be noted that following RED implementation, it will no longer be possible to report the 'fuel level' default values that were developed by the RFA (with the possible exception of 'grandfathered' biofuel). Suppliers will have to use the feedstock or process level default values that were published in the RED.

G.3 Approach to setting default values

- a) For fuel level defaults (i.e. unknown feedstock and process), the carbon intensity default value is equal to the fuel chain with the highest carbon intensity which is known to supply the UK market, taking into account country-specific practices. **It will not be possible to use fuel level default values once the RED enters into force.**
- b) For feedstock level defaults (i.e. known feedstock, unknown process), the carbon intensity default is equal to the process level default value with the highest carbon intensity.

All fuel chain default values in the RED are 'conservative'. The approach taken by the European Commission to make a default value conservative is to add a multiplier to the 'conversion' stage GHG emissions. The multiplier is currently 1.4.

G.4 Default value tables

Table 29 Fuel default values

Note that these figures are conservative. Fuel default values will not be allowed once the RED has been implemented into UK legislation (with a possible exception for grandfathered fuel for which there is no feedstock or process default in the RED).

Fuel	Carbon Intensity (gCO ₂ e/MJ)	Carbon saving (%)
Biodiesel	93	-11
Bioethanol, bio-ETBE ⁸² , bio-TAEE ⁸³	115	-37

⁸² Renewable fraction only.

⁸³ Renewable fraction only.

Fuel	Carbon Intensity (gCO ₂ e/MJ)	Carbon saving (%)
Biogas	36	57
Fischer-Tropsch diesel	6	93
Pure plant oil	87	-4

See section G.3 for details on how these default values are set.

Table 30 Feedstock default values

Note that these figures are conservative and may not represent typical practice. RFA defined default values are not RED-ready and are marked with an asterisk*

Fuel	Feedstock	Carbon Intensity (gCO ₂ e/MJ)	Carbon saving (%)
Bioethanol, ETBE ⁸⁴ , TAE ⁸⁵ 86	Barley	77*	8
	Cassava	53*	37
	Corn (produced within the European Community)	60*	29
	Corn (produced outside the European Community)	60*	29
	Corn (unknown origin)	60*	29
	Farmed wood	25	70
	Molasses	61*	27
	Spent sulphite liquor	8*	90
	Sugar beet	40	52
	Sugar cane	24	71
	Sweet sorghum	19*	77

⁸⁴ Renewable fraction only.

⁸⁵ Renewable fraction only.

⁸⁶ Note: these fuels are not accepted under the current RTFO Order – the fuel chain results are included for information only. FT diesel may be acceptable depending on it's form. Contact the RTFO Administrator if you wish to supply FT diesel biofuel.

Fuel	Feedstock	Carbon Intensity (gCO ₂ e/MJ)	Carbon saving (%)
	Triticale	61*	28
	Waste wood	22	74
	Wheat	70	16
	Wheat straw	13	85
Biodiesel (Methyl Ester)	Coconut	46*	45
	Corn oil	22*	74
	Jatropha	31*	63
	Oilseed rape	52	38
	Palm	68	19
	Soy	58	31
	Sunflower	41	51
	Tallow (category 3 or unknown)	18*	79
Biodiesel (UCO)	Tallow (except category 3) ⁸⁷	14	83
	Used cooking oil ⁸⁷	14	83
Biodiesel (Hydrotreated vegetable oil)	Coconut	42*	50
	Jatropha	26*	69
	Oilseed rape	44	47
	Palm	62	26
	Soy	50*	40
	Sunflower	32	62
Biodiesel (Co-processed hydro-treated vegetable oil) ⁸⁶	Coconut	46*	46
	Jatropha	31*	63
	Oilseed rape	52*	38
	Palm	69*	18
	Soy	57*	32
	Sunflower	41*	51

⁸⁷ The two chains tallow (except category 3) to biodiesel (ME) and used cooking oil to biodiesel (UCO) are covered under one default value in the RED (as waste vegetable or animal oil biodiesel). This split was intended to provide consistency with the terminology used in previous years of the RTFO, although it should be noted that the same RED default value has been adopted for both fuel chains. For the chain tallow (category 3 or unknown) to biodiesel (ME) the RFA-developed default value may be reported until official RED implementation in the UK.

Fuel	Feedstock	Carbon Intensity (gCO ₂ e/MJ)	Carbon saving (%)
	Tallow (category 3 or unknown)	21*	75
Biogas	Dry manure	15	82
	Municipal solid waste	23	73
	Wet manure	16	81
FT diesel ⁸⁶	Farmed wood	6	93
	Waste wood	4	95
Pure plant oil	Oilseed rape	36	57
	Soy	42*	50
Methanol ⁸⁶	Farmed wood	7	91
	Waste wood	5	94
DME ⁸⁶	Farmed wood	7	92
	Waste wood	5	95

Table 31 Process default values

Note that these figures are conservative and do not represent typical practice. RFA defined default values are not RED-ready and are marked with an asterisk*

Fuel	Feedstock	Process characteristic	Carbon Intensity (gCO ₂ e/MJ)	Carbon saving (%)
Bioethanol	Corn (produced within the European Community)	Natural gas as process fuel	43	49
	Wheat	Lignite as process fuel in CHP plant	70	16
		Natural gas as process fuel in conventional boiler	55	34

Fuel	Feedstock	Process characteristic	Carbon Intensity (gCO ₂ e/MJ)	Carbon saving (%)
		Natural gas as process fuel in CHP plant	44	47
		Straw as process fuel in CHP plant	26	69
Biodiesel (Methyl ester)	Palm	No methane capture at oil mill	68	19
		Methane capture at oil mill	37	56
Biodiesel (Hydrotreated vegetable oil)	Palm	No methane capture at oil mill	62	26
		Methane capture at oil mill	29	65
Biodiesel (Co-processed hydrotreated vegetable oil)	Palm	No methane capture at oil mill	69*	19
		Methane capture at oil mill	38*	55

G.5 What to do if there is no appropriate default value

There may be certain situations in which an appropriate default value is not available for a consignment of renewable fuel – for example, when a biofuel produced from a new feedstock (e.g. biodiesel from algae) or a new type of fuel is imported into the UK.

At the time of publishing this guidance, the European Commission had not specified the process by which default values will be developed for these new fuel chains. In the past, the RFA developed default values that suppliers could report. However, this approach is not permitted going forward and as such the RTFO Administrator will no longer develop default values for new fuels supplied in the UK.

In this period prior to RED implementation, in the absence of a suitable default value, a supplier can either calculate the carbon intensity of the fuel from actual data or use a 'fuel level' default value (as shown in Table 29). However, following implementation of the RED in the RTFO, the use of a 'fuel level' default will no longer be permitted (though it may be possible to report 'grandfathered' biofuel without providing actual data).

The fuel supplier may also wish to inform the European Commission that a new fuel chain is required. The RTFO Administrator can also pass requests on to the Commission for new fuel chains to be developed. The Administrator will request new fuel chains from the European Commission when biofuel from that feedstock exceeds one million litres a quarter.

If a new fuel chain is developed by the Commission the new carbon default can be used as soon as it is available and applied to all biofuel from that feedstock within the current obligation year. New fuel chains will be communicated to suppliers by the RTFO Administrator and included in the Technical Guidance. However, changes to existing carbon defaults will be implemented from the next obligation period (or from RED implementation if this comes first) to provide consistency for suppliers.

G.6 Calculating direct GHG saving using carbon intensity values

The direct GHG savings of a biofuel are established by comparing the biofuel's carbon intensity (CI) against the displaced fossil fuel's carbon intensity. This comparison must be done using carbon intensity values given on an energy basis i.e. grams CO₂e/MJ. For all fuels it is assumed the energy efficiency (i.e. kilometres per MJ) of vehicles is the same and, therefore, that one megajoule of biofuel displaces one megajoule of fossil fuel.

The direct GHG saving (as a percentage) is calculated using the following formula:

$$\text{GHG saving} = 1 - \frac{\text{CI of fossil fuel displaced} - \text{CI of biofuel}}{\text{CI of fossil fuel displaced}} \times 100\%$$

Note that a negative result denotes an increase in GHG emissions.

Example: Bioethanol replaces gasoline

A fossil fuel company blends bioethanol produced from sugar beet with gasoline. The percentage GHG saving is calculated as follows:

Carbon intensity of biofuel = 40 gCO₂e/MJ

Carbon intensity of gasoline = 83.8 gCO₂e/MJ

GHG saving = $(83.8 - 40)/83.8 \times 100 = 52\%$

G.7 Removal of the conservative factor

The carbon intensity of fossil fuel is defined by the RED. The current value for **all** fossil fuels (e.g. gasoline, diesel, etc) is 83.8 gCO₂e/MJ. This value will be updated over time as information on the lifecycle carbon emissions of fossil fuels is reported under the Fuel Quality Directive.

If a combination of actual and default data is used in the calculation of carbon intensities, suppliers should be aware that a conservative factor is applied to the default processing step. In the calculation of the disaggregated default values, the European Commission took a conservative approach of adding a multiplier of 1.4 to the processing step, thereby increasing emissions from processing. However, if actual data is used for the processing step, it is possible for this conservative multiplier, or factor, to be removed. However, the conservative factor can only be removed from those conversion modules for which actual data is provided for *all* of the following parameters:

- conversion efficiency,
- electricity consumption,
- fuel consumption,
- chemical inputs,
- co-product yield.

This rule applies to each conversion module individually in the case that there is more than one. Please see section 3.2.2 of Part 2 of the Technical Guidance for further guidance on editing a default fuel chain with actual data.

Annex H Assessing the impact of land-use change

Key changes to this section:

- Additional guidance added on land-use categories.
- 'Settlement' added to land-use categories.
- The approach for calculating emissions from LUC has been updated to be in line with the Commission Decision on guidelines for the calculation of land carbon stocks for the purpose of Annex V of Directive 2009/28/EC (2010/335/EU).

This Annex summarises how to report on land-use and how to assess the impact of any changes in land-use on the carbon intensity of an administrative consignment of biofuel.

H.1 Land-use on 1 January 2008

The RTFO Administrator will monitor changes in land-use. Land-use on 1 January 2008 will also be used to demonstrate RED-readiness for the RED requirement not to permit biofuels from feedstocks grown on high carbon stock land. This column will also be used to report 'degraded land', once a definition is available from the European Commission. Degraded land reported will be eligible to receive a GHG bonus of 29 gCO₂e/MJ biofuel, in line with the RED. Fuel suppliers must therefore report on how the land-used to produce a biofuel was being used on 1 January 2008. Table 32 describes the different land-use categories which exist.

Notes on land-use categories:

It should be noted that the categories 'cropland', 'grassland' and 'forestland' specifically refer to the land cover, while the categories 'peatland' and 'wetland' in fact refer to other characteristics of the land, such as soil properties, that are not mutually exclusive with the former. For example, a forest may be located on peatland, and grassland may be located on a wetland. The land types 'peatland' and 'wetland' and their variations should always be reported in precedence over the land types 'cropland', 'grassland' and 'forestland'.

and their variations. For example, if a plantation is located on peatland then this should always be reported as peatland, irrespective of whether it had forest or grassland on it.

Cropland specifically refers to land that is under control of the farm or plantation. It is feasible that the land under control of the farm is not exclusively cropland, but also includes other land uses (e.g. forestland). If the land cover does include forestland, it will have to be demonstrated that there has been no conversion of that forestland after January 2008. However, in an instance where the land used to produce the feedstock is cropland, 'cropland' should be reported.

In some cases the actual land cover may not be the same as the land category designated in a country's land registry. For example, it is feasible that the land is/was designated for future agricultural purposes in a land registry, but the actual land cover (if you visit the site) is actually forestland. In this example, the land should be reported as forestland.

Table 32 Land-use type definitions⁸⁸

Land-use	Description
Cropland – non-protected	<p>This category includes cropped land, (including rice fields and set-aside⁸⁹), and agro-forestry systems where the vegetation structure falls below the thresholds used for the Forest land category⁹⁰. The Cropland is not in a nature-protected area as defined in RED Article 17(3b).</p> <p><i>This category of land automatically complies with the RED biodiversity, high carbon stock and peatland criteria.</i></p>

⁸⁸ The definitions for 'Forest greater than 30%', 'Forest 10 to 30%', 'Wetland' and 'Degraded land' are taken from the RED. Any further detail published by the EC on these definitions will be included in a future version of the Technical Guidance.

⁸⁹ Set-aside is a term related to the EU's Common Agricultural Policy (CAP). It refers to land taken out of production to reduce the risk of food surpluses, while increasing the opportunity for environmental benefits. From 2007 set-aside land has been abolished under the CAP.

⁹⁰ Perennial crop plantations are currently classed as cropland under the RTFO. This may have to be changed if this is found to be inconsistent with the RED.

Land-use	Description
Cropland – protected – no change in status	<p>Same as above, but the Cropland is in a nature protection area as defined in RED Article 17(3b). <i>If this category is reported, parties must provide evidence that the production of the biofuel feedstock did not interfere with the nature protection purposes of the land, in order for the biofuel to comply with the RED biodiversity criterion. This can be achieved through reporting a Qualifying Standard that meets the RED biodiversity criterion or the RED Biodiversity Audit⁹¹.</i> <i>This category of land automatically complies with the high carbon stock and peatland criteria and the RED biodiversity criterion.</i></p>
Cropland – protected'	<p>Same as above, but there is no evidence that the nature protection area status has not been affected. <i>This category of land automatically complies with the high carbon stock and peatland criteria but does not comply with the RED biodiversity criterion.</i></p>
Grassland (and other wooded land not classified as forest) with agricultural use	<p>This category includes rangelands and pasture land that are not considered cropland, but which have an agricultural use. It also includes systems with woody vegetation and other non-grass vegetation such as herbs and brushes that fall below the threshold values used in the Forest Land category and which have an agricultural use. It includes extensively managed rangelands as well as intensively managed (e.g., with fertilization, irrigation, species changes) continuous pasture and hay land. <i>This category of land only complies with the biodiversity criterion if it is not highly biodiverse grassland. As the EC has not yet published guidance on highly biodiverse grassland, it is not possible to demonstrate this currently.</i> <i>This category only complies with the high carbon stock criterion if the GHG emissions of the resulting land-use change are taken into account and the relevant GHG threshold is still met.</i></p>

⁹¹ It is intended to allow a specific independent audit against the RED biodiversity criterion. However, insufficient detail is currently available from the RED to enable this option.

Land-use	Description
Grassland (and other wooded land not classified as forest) without agricultural use	<p>This category includes grasslands without an agricultural use. It also includes systems with woody vegetation and other non-grass vegetation such as herbs and brushes that fall below the threshold values used in the Forest Land category and which do not have an agricultural use.</p> <p><i>This category of land only complies with the biodiversity criterion if it is not highly biodiverse grassland. As the EC has not yet published guidance on highly biodiverse grassland, it is not possible to demonstrate this currently.</i></p> <p><i>This category only complies with the high carbon stock criterion if the GHG emissions of the resulting land-use change are taken into account and the relevant GHG threshold is still met.</i></p>
Forest greater than 30%	<p>Continuously forested areas, namely land spanning more than one hectare with trees higher than five metres and a canopy cover of more than 30%, or trees able to reach those thresholds in situ.</p> <p><i>This category of land only complies with the biodiversity criterion if it can be demonstrated that the forest in question was not a Primary forest (i.e. no signs of human disturbance such as logging for example), and that the land was not in a protected area.</i></p> <p><i>This category only complies with the high carbon stock criterion if evidence is provided that the status of the land has not changed compared to January 2008.</i></p>

Land-use	Description
Forest 10 to 30%	<p>Land spanning more than one hectare with trees higher than five metres and a canopy cover of between 10% and 30%, or trees able to reach those thresholds in situ, unless evidence is provided that the carbon stock of the area before and after conversion is such that, when the methodology laid down in part C of Annex V of the RED is applied, the conditions laid down in paragraph 2 of Article 17 of the RED would be fulfilled.</p> <p><i>This category of land only complies with the biodiversity criterion if can demonstrate that the forest in question was not a Primary forest (i.e. no signs of human disturbance such as logging for example), and that the land was not in a protected area.</i></p> <p><i>This category only complies with the high carbon stock criterion if the status of the land has not changed, or if the GHG emissions of any land-use change are taken into account and the relevant GHG threshold is still met.</i></p>
Wetland	<p>Namely land that is covered with or saturated with or saturated by water permanently or for a significant part of the year.</p> <p><i>This category of land only complies with the biodiversity criterion if can demonstrate that the wetland in question was not a primary forest, in a designated area, or a highly biodiverse grassland.</i></p> <p><i>This category only complies with the high carbon stock criterion if evidence is provided that the status of the land has not changed compared to January 2008.</i></p>
Undrained peatland	<p>Namely peatland that was not drained (either partially or completely) in January 2008.</p> <p><i>This category of land only complies with the biodiversity criterion if can demonstrate that the peatland in question was not a primary forest, in a designated area, or a highly biodiverse grassland.</i></p> <p><i>This category only complies with the high carbon stock (peatland) criterion if evidence is provided that the land has not been drained.</i></p>

Land-use	Description
Degraded land	<p>The land was not in use for agriculture or any other activity in January 2008; and</p> <p>Falls into one of the following categories:</p> <p>a) 'severely degraded land', including such land that was formerly in agricultural use and that, for a significant period of time, has either been significantly salinated or presented significantly low organic matter content and has been severely eroded; or</p> <p>b) 'heavily contaminated land' that is unfit for the cultivation of food and feed due to soil contamination.</p> <p><i>At the time of writing the EC has not published further detail on how degraded land should be further defined. As such it is not possible to say whether or not degraded land would always automatically comply with the RED sustainability requirements.</i></p>
Settlement	<p>Includes all developed land, including transportation infrastructure and human settlements of any size, unless they are already included under other categories. Examples of settlements include land along streets, in residential (rural and urban) and commercial lawns, in public and private gardens, in golf courses and athletic fields, and in parks, provided such land is functionally or administratively associated with particular cities, villages or other settlement types and is not accounted for in another land use category. This definition is taken from the 2006 IPCC Guidelines for National Greenhouse Gas Inventories, Volume 4. The RED recommends that this source is used by the EC in developing its guidelines on the calculation of land carbon stocks and is thus deemed an appropriate definition for this purpose.</p> <p><i>This category of land automatically complies with the RED biodiversity, high carbon stock and peatland criteria. However the GHG emissions of any land-use change must be taken into account and the relevant GHG threshold must still be met.</i></p>

H.2 Methodology for reporting land use change emissions

This section sets out how emissions due to land-use change should be calculated. At present, it is not possible to report emission savings from soil carbon accumulation via improved agricultural practices,

such as the change from full to no tillage practice. It is likely that this will be permitted from RED implementation.

The paragraphs below set out the rules for GHG emission calculations due to land-use change. The European Commission's transparency platform has published an annotated example of such emissions calculations which can be downloaded from their website⁹².

Please note that all calculations in this section refer to *direct* land-use changes. There are currently no requirements on operators of generating stations to report or include in their carbon intensity calculations, emissions from *indirect* land-use change. The Directive may be amended to include this in the future.

Land-use change related emissions shall be calculated based on the difference in carbon stocks of the land between the current and previous land use (on 1 January 2008), as shown in Equation 1.

Equation 1: Land use change emission

$$e_l = (CS_R - CS_A) \times 3,664 \times (1/20) \times (1/P) - e_B$$

Where:

e_l is the annualised GHG emissions due to land-use change (in gCO₂e/MJ)

CS_R is the carbon stock associated with the reference land use (i.e. the land use in January 2008 or 20 years before the feedstock was obtained, whichever the later) (in gC/ha)

CS_A is the carbon stock associated with the actual land use (in gC/ha). In cases where the carbon stock accumulates over more than one year, the value attributed to CS_A shall be the estimated stock per unit area after 20 years or when the crop reaches maturity, whichever the earlier

P is the productivity of the crop (in MJ/ha)

e_B is a bonus of 29 gCO₂e/MJ if the biofuel feedstock is obtained from restored degraded land under the conditions set out in the paragraphs below

Commission Decision 2010/335/EU of 10 June 2010 on guidelines for the calculation of land carbon stocks for the purpose of Annex V to

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http://ec.europa.eu/energy/renewables/biofuels/doc/ecofys_report_annotated_example_carbon_stock_calculation.pdf

Directive 2009/28/EC⁹³ defines the calculation of the carbon stocks as follows:

Equation 2: Carbon stock

$$CS_i = SOC + C_{VEG}$$

Where:

SOC is the soil organic carbon (in gC/ha)

C_{VEG} is the above and below ground vegetation carbon stock (in gC/ha)

The key part of the land use change calculation is therefore an estimation of the change in carbon stocks. This is based on the difference between the carbon stock now and the carbon stock in January 2008, (or 20 years before the feedstock was obtained, whichever is the later date).

The following sections explain what the carbon stock estimates are based on i.e.:

- Previous land use
- Climate and in some cases ecological zone
- Soil type
- Soil management (for both previous and new land use)
- Soil input (for both previous and new land use)

The location and nature of the land use change must be known by the operator of a generating station reporting land use change. When the change is known, it is possible to use the look-up tables in Commission Decision 2010/335/EU for the different parameters listed above to estimate the change in carbon stock.

- Climate, ecological zone and soil type can be taken from maps and data provided in the Decision and on the EU Transparency Platform;
- Soil management (whether full-till, reduced-till or no-till) and soil inputs (low, medium, high-with manure, and high-without manure) are factors that would need to be reported by the operator of a generating station reporting land-use change;

Definitions of the different land types are provided in Table 32.

⁹³ This Decision is available online: <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2010:151:0019:0041:EN:PDF>

There are two land types (e.g. settlements⁹⁴ and degraded land) for which the carbon stock has not yet been defined in the existing Decision. In the absence of specified carbon stock for settlements, the RTFO Administrator advises that the carbon stock of the settlement should be measured. It also advises that the carbon stock of any land claimed to be degraded land should also be measured.

H.2.1 Soil organic carbon

Mineral soils

Parties may use several methods to determine soil organic carbon, including measurements⁹⁵. As far as the methods are not based on measurements, they shall take into account climate, soil type, land cover, land management and inputs.

As a default method, the following equation can also be used:

Equation 3: Soil organic carbon

$$SOC = SOC_{ST} \times F_{LU} \times F_{MG} \times F_I$$

Where:

SOC_{ST} is the standard soil organic carbon in the 0 – 30 cm topsoil layer (in gC/ha)

F_{LU} is the land use factor reflecting the difference in soil organic carbon associated with the type of land use compared to the standard soil organic carbon (no unit)

F_{MG} is the land use factor reflecting the difference in soil organic carbon associated with the principle management practice compared to the standard soil organic carbon (no unit)

F_I is the land use factor reflecting the difference in soil organic carbon associated with different levels of carbon input to soil compared to the standard soil organic carbon (no unit)

SOC_{ST} can be looked-up in Table 1 of Commission Decision 2010/335/EU⁹³ depending on climate region and soil type. The climate region can be determined from the climate region data layers

⁹⁴ Based on the 2006 IPCC Guidelines for National GHG inventories (Vol 4), a settlement includes all developed land, including transportation infrastructure and human settlements of any size, unless they are already included under other categories.

⁹⁵ Soil organic carbon levels can traditionally be measured using mass loss on ignition or wet oxidation. However, newer techniques are being developed, which can either be carried out in the field or remotely (near infrared reflectance spectrometry, remote hyperspectral sensing).

available on the Commission's transparency platform⁹⁶. The soil type can be determined by following the flow diagram on page 12 of the Commission Decision 2010/335/EU⁹³ or following the soil type data layers also available from the transparency platform⁹⁷.

F_{LU} , F_{MG} and F_I can be looked-up in Tables 2 to 8 of Decision 2010/335/EU,⁹³ depending on climate region, land use, land management and input.

Organic soils (histosols)

No default method is available for determining the SOC value of organic soils. The method used by parties should however take into account the entire depth of the organic soil layer as well as climate, land cover and land management and input. Such methods may include measurements.

Where carbon stock affected by soil drainage is concerned, losses of carbon following drainage shall be taken into account by appropriate methods, potentially based on annual losses of carbon following drainage.

H.2.2 Above and below ground vegetation carbon stock

For some vegetation types, C_{VEG} can be directly read in tables 9 to 18 of Commission Decision 2010/335/EU⁹³.

If a look-up value is not available, vegetation carbon stock shall take into account both above and below ground carbon stock in living stock (C_{BM} in gC/ha) and above and below ground carbon stock in dead organic matter (C_{DOM} in gC/ha). These can be calculated based on the following equations:

Equation 4: Above and below ground carbon stock in living stock

$$C_{BM} = B_{AGB} \times CF_B + B_{BGB} \times CF_B$$

or

$$C_{BM} = (B_{AGB} \times CF_B) \times (1+R)$$

Where:

B_{AGB} is the weight of above ground living biomass (in kg dry matter/ha)

⁹⁶ The climate region and soil type data layers are available online from <http://eusoils.jrc.ec.europa.eu/projects/RenewableEnergy/>

⁹⁷ This Decision is available online: <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2010:151:0019:0041:EN:PDF>

B_{BGB} is the weight of below ground living biomass (in kg dry matter/ha)

CF_B is the carbon fraction of dry matter in living biomass (in kgC/kg dry matter)

R is the ratio of below ground carbon stock in living biomass to above ground carbon stock in living biomass

Equation 5: Above and below ground carbon stock in dead organic matter

$$C_{DOM} = DOM_{DW} \times CF_{DW} + DOM_{LI} \times CF_{LI}$$

Where:

DOM_{DW} is the weight of dead wood pool (in kg dry matter/ha)

CF_{DW} is the carbon fraction of dry matter in dead wood pool (in kgC/kg dry matter)

DOM_{LI} is the weight of litter (in kg dry matter/ha)

CF_{LI} is the carbon fraction of dry matter in litter (in kgC/kg dry matter)

These values are determined as follows:

- B_{AGB} shall be the average weight of the above ground living biomass during the production cycle for cropland, perennial crops and forest plantations
- CF_B = 0.47
- B_{BGB} shall be the average weight of the below ground living biomass during the production cycle for cropland, perennial crops and forest plantations
- R can be read in tables 11 to 18 of the Commission Decision 2010/335/EU
- CF_{DW} = 0.5
- CF_{LI} = 0.4

H.2.3 Degraded land bonus

A bonus of 29 gCO₂e/MJ shall be attributed if evidence is provided that the land on which the biofuel feedstock was grown:

- was not in use for agriculture or any other activity in January 2008; and
- falls into one of the following categories:

- a) severely degraded land including such land that was formerly in agricultural use;
- b) heavily contaminated land

The bonus shall apply for a period of 10 years from the date of conversion of the land to agricultural use, provided that a steady increase in carbon stocks as well as a sizable reduction in erosion phenomena for land falling under (a) are ensured and that soil contamination for land falling under (b) is reduced.

The Comitology process of the EC is currently working on a refined definition of severely degraded and heavily contaminated land. Until further guidance is issued, no biofuel will be eligible to claim the degraded land bonus. The RTFO Administrator will update this guidance document to include the definition of degraded land before the bonus can be claimed.

Annex I Accuracy level

Key changes to this section:

- Accuracy levels have been adjusted to provide information on which part of the supply chain actual data was provided for, if at all. The accuracy levels are important for determining the RED-readiness of the fuel in terms of the GHG criteria.

In addition to reporting the carbon intensity of an administrative consignment of biofuel, suppliers must also report on what part of the fuel chain, they have supplied actual data, if at all. This information will be used to provide an indication of the RED-readiness of a consignment of biofuel.

Each consignment of fuel is attributed a certain accuracy level, based on the amount of actual data that is used in the calculation of the carbon intensity of the fuel. Table 33 shows the accuracy levels which should be reported for administrative consignments.

Table 33 Accuracy levels corresponding to type of default value or data used

Type of default value or data	Accuracy level
Fuel default	0
Feedstock default	1
Process default	2
Actual data for transport, drying and storage, fuel depot or filling station	3
Actual data for process module	4
NUTS2 or other regional cultivation emissions	5
Actual 'collected' cultivation data	6
Actual data provided for the entire fuel chain	7

To claim an accuracy level higher than the defaults (i.e. > 2) the actual data must cover all emissions that are likely to contribute more

than one percent of the anticipated fuel chain GHG emissions. So, for example, where a mix of actual and default data is used in the process module accuracy level 4 cannot be claimed, but if actual data has been captured for all process emissions that contribute to one percent or more of the fuel chain emissions, then accuracy level 4 can be claimed.

If a supplier uses the carbon calculator to report to the RFA, these accuracy levels will be calculated automatically. If a supplier uploads data manually to ROS, the highest accuracy level should be reported. For example, a supplier could use actual 'collected' cultivation data as well as 'actual data for transport'. In this case, the supplier should report accuracy level 6 in ROS.

Companies may calculate the carbon intensity of their fuel using cultivation stage emissions which have been estimated at a NUTS2 level by Member States. Accuracy Level 5 should be used for any consignment of fuel which uses this data for carbon intensity calculations.

If companies have sourced their feedstock from a NUTS2 region in Europe which has a carbon intensity higher than the RED default value ('not NUTS2 compliant'), they will have to source actual data for the cultivation stage, or use 'regional level' cultivation data in order to be RED-ready in relation to this criteria. If this is the case, then Accuracy Level 6 should be reported. If the NUTS2 compliance status is not known, then the fuel is also considered not to be RED-ready.

When two or more consignments of fuel with different accuracy levels are combined, the new accuracy level is equal to the accuracy level of the consignment with the lower accuracy level.

When entering data in ROS, ROS will automatically select Accuracy Levels 0, 1 or 2 depending on whether a known feedstock (1) and process (2) are entered. This Accuracy Level can be overridden where actual data was used in the GHG calculation.

Annex J Known unknowns

This Annex is new.

This annex sets out the current 'known unknowns' for which further information relevant to RED implementation is expected to be published. Some of these issues relate to articles in the RED which contain provisions for the Commission to provide definitive interpretation via the Comitology process⁹⁸. Other items are open for either economic operators or Member States to interpret. This section is structured according to the route through which the information is expected to become available.

To help companies prepare, for each aspect we set out the current proposed approach to inclusion in the RTFO C&S reporting scheme. The issues will be subject to formal consultation by the RTFO Administrator once further information is known and before changes are made to the RTFO.

J.1 Outcomes of Comitology process

The following items are awaiting outcomes from the Comitology process. The Comitology process started with the first meeting of the 'Committee on the Sustainability of Biofuels and Bioliquids' in October 2010, but the timeframe for the continuing process is not fixed.

J.1.1 Decision on definition of highly biodiverse grassland

The EC is working on a detailed definition of highly biodiverse grassland, relevant to Article 17(3)(c) of the RED. Once published DfT intends to include the definition directly in the RTFO, with the following implications for the RTFO:

- Further detail on the definition of highly biodiverse grassland will enable economic operators to do their own independent audit against RED biodiversity criteria, in the absence of a voluntary scheme that covers the issue;

⁹⁸ See http://europa.eu/scadplus/glossary/comitology_en.htm for an explanation of the Comitology process.

- The RTFO Administrator will also consider whether it is appropriate to adapt the biodiversity criterion in the RTFO Meta-Standard to be in line with the RED requirements on highly biodiverse grassland. This would require a re-benchmark of existing Qualifying Standards. Any changes to the RTFO Meta-Standard would be consulted on in advance by the RTFO Administrator.

J.1.2 Decision on definition of degraded land for bonus

The EC is working on a detailed definition of degraded land, which is necessary to enable economic operators who cultivate biofuel feedstocks on degraded land to claim a GHG bonus of 29 gCO₂e/MJ.

- Currently degraded land is included as a land-use category in the RTFO, but economic operators are unable to use the category in practice as it is not fully defined. Once published, the definition will be included in the Technical Guidance to enable reporting.
- Economic operators will be able to claim the GHG bonus for production of feedstock on degraded land once the EC Decision on the definition of degraded land is published **and** full RED implementation has taken place. Until then, parties may still report degraded land as their previous land use but cannot claim any bonus.

J.1.3 Non-mandatory sustainability criteria

The RED includes non-mandatory sustainability requirements that economic operators and Member States will be required to provide information on, also referred to as 'reporting items' (see Article 18(3) and 18(4) 2nd sub-paragraph, 2nd sentence of RED).

The EC is developing a list of non-mandatory reporting items through the Comitology process. The RTFO Meta-Standard could have a role in providing information on the reporting items.

When further detail of the reporting items is known, the RFA will consider whether it is appropriate to adapt the RTFO Meta-Standard to be in line with the RED reporting items. This would require a re-benchmark of existing Qualifying Standards (although the EC may also benchmark voluntary schemes against the non-mandatory sustainability requirements). Any changes to the RTFO Meta-Standard would be consulted on in advance by the RTFO Administrator.

J.2 Information to be published by the EC

J.2.1 'Missing' NUTS2 data for Member State reports not yet approved by Commission

Article 19(2) of the RED requires Member States to submit a report, by 31 March 2010, including a list of areas on their territory where GHG emissions from crop cultivation can be expected to be at or below average, as set out in Annex V, part D. The report is required to describe the method and data used.

To date, not all Member States have submitted their reports; furthermore not all of the reports that have been submitted have been approved by the Commission.

Once approved NUTS2 data is published for a Member State on the EC Transparency Platform, the RFA will include it in the RTFO including in the Carbon Calculator. New data can be used as soon as it is available whilst changes to existing NUTS2 data will apply from the next obligation period.

J.2.2 Guidance document on how to demonstrate the status of the land

The EC is preparing a guidance document for economic operators to help identify the status of the land in January 2008. The guidance document has no formal legal status, but is expected to provide economic operators with further advice on how to demonstrate compliance with the RED land use criteria. The document is expected to be published on the EC Transparency Platform during 2011.

J.2.3 Indirect Land Use Change

On 22 December 2010 the European Commission published a report on indirect land-use change related to biofuels and bioliquids. The report acknowledges that indirect land-use change can reduce greenhouse gas emissions savings associated with biofuels, but also identifies a number of uncertainties associated with the available models.

The Commission proposes to carry out a detailed assessment of a shortlist of the potential policy approaches for dealing with this issue, which will be published no later than July 2011. This will, if appropriate, be accompanied by a legislative proposal for amending the Renewable Energy and Fuel Quality Directives.

Suppliers may continue with the existing approach to use the 'Methodology for projects with low risk of ILUC', whereby companies can report on a voluntary basis (see Annex E).

J.3 Decisions by UK government

J.3.1 Definition of wastes and residues

The RED allows for double counting of biofuels made from wastes and residues in Member States' national schemes (i.e. the RTFO for the UK). In addition, biofuels produced from wastes and residues, other than agricultural, aquaculture, fisheries and forestry residues, do not need to comply with the RED land-use criteria and only need to meet the GHG threshold. In calculating the GHG emissions, certain wastes and residues will be considered to have zero life-cycle GHG emissions up to the process of collection of the feedstocks.

The RED, together with the EC 'Communication on practical implementation', provides some guidance on which raw materials can be classified as wastes or residues. However the actual list of feedstocks that will be classed as wastes and residues (and which category of wastes and residues) is a decision for individual Member States.

It is anticipated that the next version of the Technical Guidance for RED implementation will include lists of wastes and residues.

DECC, Ofgem and the Environment Agency are also working on an approach to wastes and residues to be implemented for bioliquids in the Renewables Obligation for the purposes of exemptions to land-use criteria and for zero life-cycle GHG emissions. In the interests of consistency in the UK, the RFA is engaged with DECC and Ofgem on this topic. Note that the definition for bioliquid feedstocks does not necessarily relate directly to biofuel feedstocks that can be counted twice towards the renewable transport target (bioliquids for electricity generation from wastes and residues cannot be counted twice towards renewable energy targets).

Wastes and residues is also a key topic of discussion in REFUREC (section J.4.2), with the intention to facilitate a harmonised approach across the EC.

J.4 Other fora in which RFA is engaged

J.4.1 CEN TC/383 'Sustainably produced biomass for energy applications'

CEN Technical Committee (TC) 383⁹⁹ on sustainably produced biomass for energy applications was created in 2008 to work on European Standards for sustainability principles, criteria and indicators, their verification, and auditing schemes for biomass for energy applications. The RED sets the framework for the scope of the work of TC 383. In May 2009, the EC requested CEN/TC 383 to initiate work on standards.

In December 2010 draft standards were published on Terminology (including definition of wastes and residues), Biodiversity and environmental aspects and Conformity (i.e. chain of custody). These standards are subject to stakeholder consultation until March 2011, after which final standards will be published. An additional standard on GHG methodology is due to be published in April 2011.

The CEN standards have no formal status with UK government policy. Nonetheless, the RFA intend to keep a watching brief on CEN.

J.4.2 REFUREC

The Renewable Fuels Regulators Club (REFUREC¹⁰⁰) is a network of governmental institutions responsible for regulating biofuels within their respective countries. It was initiated by the RFA in 2008.

REFUREC offers a pan-European platform for discussion, information exchange and tackling cross-border issues relating to the biofuels market in the European Union and beyond. Meetings are held quarterly.

REFUREC aims to address relevant topics like the implementation of the Renewable Energy Directive and the Fuel Quality Directive. It is hoped that through REFUREC common positions will be taken across the EU on topics such as wastes and residues and detailed chain of custody rules.

⁹⁹ European Committee for Standardization (CEN). Refer to <http://www.cen.eu/cen/pages/default.aspx> and <http://www.cen.eu/cen/Sectors/Sectors/UtilitiesAndEnergy/Fuels/Pages/Sustainability.aspx>

¹⁰⁰ <http://www.refurec.org>

Annex K Standard terms

Changes have been made to the standard terms for RED-ready codes

Table 34 Standard terms for reporting the renewable fuel type in C&S reports

Fuel Type Description	Fuel Type Code
Biobutanol	BUTYL
Biodiesel CHVO	CHVO
Biodiesel HVO	HVO
Biodiesel ME	ME
Biodiesel UCO	UCO
BioETBE	ETBE
Bioethanol	EtOH
Biogas	G591
BioMTBE	MTBE
BioTAEE	TAEE
DME	DME
FT diesel	FTD
Methanol	MetOH
Pure vegetable oil	PPO

Table 35 Standard terms for feedstock origin

Country	ISO Country Code
Argentina	ARG
Australia	AUS
Austria	AUT
Belgium	BEL
Brazil	BRA
Bulgaria	BGR
Cambodia	KHM
Canada	CAN
Chile	CHL
China	CHN
Costa Rica	CRI
Cyprus	CYP
Czech Republic	CZE
Denmark	DNK
Estonia	EST
Finland	FIN
France	FRA
Germany	DEU
Greece	GRC
Guatemala	GTM
Hungary	HUN
India	IND
Indonesia	IDN
Ireland	IRL
Italy	ITA
Latvia	LVA
Lithuania	LTU
Luxembourg	LUX
Malawi	MWI
Malaysia	MYS
Malta	MLT

Country	ISO Country Code
Mexico	MEX
Mozambique	MOZ
Netherlands	NLD
Nicaragua	NIC
Nigeria	NGA
Pakistan	PAK
Peru	PER
Philippines	PHL
Poland	POL
Portugal	PRT
Romania	ROU
Russian Federation	RUS
Serbia	SRB
Slovakia	SVK
Slovenia	SVN
South Africa	ZAF
Spain	ESP
Sudan	SDN
Sweden	SWE
Switzerland	CHF
Thailand	THA
Ukraine	UKR
United Kingdom	GBR
United States	USA
Unknown	U/K

Table 36 Standard terms for feedstock type

Feedstock Name	Code
Barley	BARL
Cassava	CASS
Cheese (by-product)	CHEESE
Coconut	COCO

Feedstock Name	Code
Corn (Community produced)	ECCORN
Corn (origin unknown)	CORNUN
Corn (produced outside the EC)	NECCOR
Corn oil	COIL
Dry manure	DMANU
Farmed wood	FWOOD
Jatropha	JATRA
Manure	MANURE
Molasses	MOL
Municipal solid waste	MSW
Oilseed rape	OSR
Palm	PALM
Rye	RYE
Soya beans	SOY
Sugar beet	SBEET
Sugar cane	SCANE
Sulphite liquor	SULI
Sunflower	SUN
Sweet sorghum	SSORG
Tallow - category 3 or unknown	TALL3
Tallow - except category 3	TALLEX3
Triticale	TRICAL
Used cooking oil	UCO
Unknown	U/K
Waste wood	WWOOD
Wet manure	WMANU
Wheat	WHEAT
Wheat straw	WHSTRA

Table 37 **Standard terms for process type**

Process Type	Code
Biofuel as process fuel in conventional boiler	BiofBoil

Process Type	Code
Lignite as process fuel in CHP plant	LigCHP
Methane capture at oil mill	MetCap
Natural gas as process fuel in CHP plant	NGCHP
Natural gas as process fuel in conventional boiler	NGBoil
No methane capture at oil mill	NoMetCap
Straw as process fuel in CHP plant	StwCHP
Unknown	U/K
n/a	n/a

Table 38 Standard terms for feedstock standard

Standard	Code
Abengoa RED Bioenergy Sustainability Assurance	RBSA
Basel criteria for soy	Basel
Biomass Biofuels voluntary scheme	2BSvs
Bonsucro (formerly Better Sugarcane Initiative, BSI)	BSI
Bonsucro (formerly BSI) EU	BSIRED
By-product	BYPRO
Fediol	FED
Forest Stewardship Council	FSC
Genesis Quality Assurance	GEN
GlobalGAP	GGAP
Greenenergy Brazilian Bioethanol ver. prog.	GBBVP
International Federation of Organic Agriculture Movements	IFOAM
International Sustainability & Carbon Cert.	ISCC
Linking Environment And Farming Marque	LEAF
None – feedstock not certified	None
ProTerra	PROT
Qualität und Sicherheit	QUS
Red Tractor (formerly ACCS)	REDTRA
Roundtable on Sustainable Biofuels	RSB
Roundtable on Sustainable Biofuels EU RED	RSBRED

Standard	Code
Roundtable on Sustainable Palm Oil	RSPO
Roundtable on Sustainable Palm Oil - GreenPalm	GPALM
Round Table on Responsible Soy	RTRS
Round Table on Responsible Soy EU RED	RTRSEU
RTFO Biofuel Sustainability Meta-Standard	Meta
Scottish Quality Crops	SQC
Social Accountability 8000	SA8000
Sustainable Agriculture Network/Rainforest Allianc	SANRA
Unknown	U/K

Table 39 Standard terms for land-use on 1 January 2008

Land-use	Code
By-product	BYPRO
Cropland – non-protected	CROPNP
Cropland - protected	CROPP
Cropland – protected – no change in status	CROPPC
Cropland - protection status unknown	CROPU
Degraded land	DGL
Forest >30%	FST30
Forest >30% - no change in status	FST30N
Forest 10-30%	FST10
Forest 10-30% - no change in status	FST10N
Grassland – ag. use	GRAWA
Grassland - non-ag. use	GRANA
Settlement	SETT
Undrained peatland	UDPL
Undrained peatland - no change in status	UDPLN
Unknown	U/K
Wetland	WETL
Wetland - no change in status	WETLN

Table 40 **Standard terms for EU NUTS2 regions**

NUTS2 Region	Code
AT11 - Burgenland	AT11
AT12 - Lower Austria	AT12
AT13 - Vienna Capital region	AT13
AT21 - Carinthia	AT21
AT22 - Styria	AT22
AT31 - Upper Austria	AT31
AT32 - Salzburg	AT32
AT33 - Tyrol	AT33
AT34 - Vorarlberg	AT34
BE10 - Brussels-Capital region	BE10
BE21 - Antwerp	BE21
BE22 - Limburg (Belgium)	BE22
BE23 - East-Flanders	BE23
BE24 - Brabant	BE24
BE25 - West-Flanders	BE25
BE31 - Brabant Wallon	BE31
BE32 - Hainaut	BE32
BE33 - Liege	BE33
BE34 - Luxembourg	BE34
BE35 - Namur	BE35
BG31 - Severozapaden	BG31
BG32 - Severen tsentralen	BG32
BG33 - Severoiztochen	BG33
BG34 - Yugoiztochen	BG34
BG41 - Yugozapaden	BG41
BG42 - Yuzhen tsentralen	BG42
CY00 - Cyprus	CY00
CZ01 - Prague Capital region	CZ01

NUTS2 Region	Code
CZ02 - Central Bohemian region	CZ02
CZ03 - Southwest Czech Republic region	CZ03
CZ04 - Northwest Czech Republic region	CZ04
CZ05 - Northeast Czech Republic region	CZ05
CZ06 - Southeast Czech Republic region	CZ06
CZ07 - Central Moravia	CZ07
CZ08 - Moravian-Silesian region	CZ08
DE11 - Stuttgart	DE11
DE12 - Karlsruhe	DE12
DE13 - Freiburg	DE13
DE14 - Tübingen	DE14
DE21 - Upper Bavaria	DE21
DE22 - Lower Bavaria	DE22
DE23 - Upper Palatinate	DE23
DE24 - Upper Franconia	DE24
DE25 - Middle Franconia	DE25
DE26 - Lower Franconia	DE26
DE27 - Swabia	DE27
DE30 - Berlin	DE30
DE41 - Brandenburg-Northeast	DE41
DE42 - Brandenburg-Southwest	DE42
DE50 - Bremen	DE50
DE60 - Hamburg	DE60
DE71 - Darmstadt	DE71
DE72 - Giessen	DE72
DE73 - Kassel	DE73
DE80 - Mecklenburg-Western Pomerania	DE80
DE91 - Brunswick	DE91

NUTS2 Region	Code
DE92 - Hanover	DE92
DE93 - Lüneburg	DE93
DE94 - Weser-Ems	DE94
DEA1 - Düsseldorf	DEA1
DEA2 - Cologne	DEA2
DEA3 - Münster	DEA3
DEA4 - Detmold	DEA4
DEA5 - Arnsberg	DEA5
DEB1 - Koblenz	DEB1
DEB2 - Trier	DEB2
DEB3 - Rhine-Hesse-Palatinate	DEB3
DEC0 - Saarland	DEC0
DED1 - Chemnitz	DED1
DED2 - Dresden	DED2
DED3 - Leipzig	DED3
DEE0 - Saxony-Anhalt	DEE0
DEF0 - Schleswig-Holstein	DEF0
DEG0 - Thuringia	DEG0
DK01 - Capital region of Denmark	DK01
DK02 - Sealand	DK02
DK03 - South Denmark region	DK03
DK04 - Centre Denmark region	DK04
DK05 - North Denmark region	DK05
EE00 - Estonia	EE00
ES11 - Galicia	ES11
ES12 - Principality of Asturias	ES12
ES13 - Cantabria	ES13
ES21 - Basque Country	ES21

NUTS2 Region	Code
ES22 - Navarre	ES22
ES23 - La Rioja	ES23
ES24 - Aragon	ES24
ES30 - Community of Madrid	ES30
ES41 - Castile and León	ES41
ES42 - Castile-La Mancha	ES42
ES43 - Extremadura	ES43
ES51 - Catalonia	ES51
ES52 - Valencian Community	ES52
ES53 - Balearic Islands	ES53
ES61 - Andalusia	ES61
ES62 - Region of Murcia	ES62
ES63 - Ceuta	ES63
ES64 - Melilla	ES64
ES70 - Canary Islands	ES70
FI13 - Eastern Finland Province	FI13
FI18 - Southern Finland Province	FI18
FI19 - Western Finland Province	FI19
FI1A - Northern Finland Province	FI1A
FI20 - Åland Islands	FI20
FR10 - Ile-de-France	FR10
FR21 - Champagne-Ardenne	FR21
FR22 - Picardy	FR22
FR23 - Upper Normandy	FR23
FR24 - Centre France region	FR24
FR25 - Lower Normandy	FR25
FR26 - Burgundy	FR26
FR30 - Nord - Pas-de-Calais	FR30

NUTS2 Region	Code
FR41 - Lorraine	FR41
FR42 - Alsace	FR42
FR43 - Franche-Comté	FR43
FR51 - Pays de la Loire	FR51
FR52 - Brittany	FR52
FR53 - Poitou-Charentes	FR53
FR61 - Aquitaine	FR61
FR62 - Midi-Pyrénées	FR62
FR63 - Limousin	FR63
FR71 - Rhône-Alpes	FR71
FR72 - Auvergne	FR72
FR81 - Languedoc-Roussillon	FR81
FR82 - Provence-Alpes-Côte d'Azur	FR82
FR83 - Corsica	FR83
FR91 - Guadeloupe	FR91
FR92 - Martinique	FR92
FR93 - French Guiana	FR93
FR94 - Réunion	FR94
GR11 - East Macedonia and Thrace	GR11
GR12 - Central Macedonia	GR12
GR13 - West Macedonia	GR13
GR14 - Thessaly	GR14
GR21 - Epirus	GR21
GR22 - Ionian Islands	GR22
GR23 - West Greece Periphery	GR23
GR24 - Central Greece	GR24
GR25 - Peloponnese	GR25
GR30 - Attica	GR30

NUTS2 Region	Code
GR41 - South Aegean Periphery	GR41
GR42 - North Aegean Periphery	GR42
GR43 - Crete	GR43
HU10 - Central Hungary	HU10
HU21 - Central Transdanubia	HU21
HU22 - West Transdanubia	HU22
HU23 - South Transdanubia	HU23
HU31 - North Hungary	HU31
HU32 - North Great Plains	HU32
HU33 - South Great Plains	HU33
IE01 - Border, Midland and Western	IE01
IE02 - Southern and Eastern	IE02
ITC1 - Piedmont	ITC1
ITC2 - Aosta Valley	ITC2
ITC3 - Liguria	ITC3
ITC4 - Lombardy	ITC4
ITD1 - Autonomous Province of Bolzano-Bozen	ITD1
ITD2 - Autonomous Province of Trento	ITD2
ITD3 - Veneto	ITD3
ITD4 - Friuli-Venezia Giulia	ITD4
ITD5 - Emilia-Romagna	ITD5
ITE1 - Tuscany	ITE1
ITE2 - Umbria	ITE2
ITE3 - Marche	ITE3
ITE4 - Lazio	ITE4
ITF1 - Abruzzo	ITF1
ITF2 - Molise	ITF2
ITF3 - Campania	ITF3

NUTS2 Region	Code
ITF4 - Puglia	ITF4
ITF5 - Basilicata	ITF5
ITF6 - Calabria	ITF6
ITG1 - Sicily	ITG1
ITG2 - Sardinia	ITG2
LT00 - Lithuania	LT00
LU00 - Luxembourg (Grand-Duché)	LU00
LV00 - Latvia	LV00
MT00 - Malta	MT00
NL11 - Groningen	NL11
NL12 - Friesland	NL12
NL13 - Drenthe	NL13
NL21 - Overijssel	NL21
NL22 - Gelderland	NL22
NL23 - Flevoland	NL23
NL31 - Utrecht	NL31
NL32 - North Holland	NL32
NL33 - South Holland	NL33
NL34 - Zeeland	NL34
NL41 - North Brabant	NL41
NL42 - Limburg (Netherlands)	NL42
PL11 - Lodzkie	PL11
PL12 - Masovian Voivodeship	PL12
PL21 - Lesser Poland Voivodeship	PL21
PL22 - Silesian Voivodeship	PL22
PL31 - Lublin Voivodeship	PL31
PL32 - Subcarpathian Voivodeship	PL32
PL33 - Swietokrzyskie Voivodeship	PL33

NUTS2 Region	Code
PL34 - Podlaskie Voivodeship	PL34
PL41 - Greater Poland Voivodeship	PL41
PL42 - West Pomeranian Voivodeship	PL42
PL43 - Lubusz Voivodeship	PL43
PL51 - Lower Silesian Voivodeship	PL51
PL52 - Opole Voivodeship	PL52
PL61 - Kuyavian-Pomeranian Voivodeship	PL61
PL62 - Warmina-Masurian Voivodeship	PL62
PL63 - Pomeranian Voivodeship	PL63
PT11 - Norte Region of Portugal	PT11
PT15 - Algarve	PT15
PT16 - Centro Region of Portugal	PT16
PT17 - Lisbon	PT17
PT18 - Alentejo	PT18
PT20 - Azores	PT20
PT30 - Madeira	PT30
RO11 - North West Romania region	RO11
RO12 - Centre Romania region	RO12
RO21 - North East Romania region	RO21
RO22 - South East Romania region	RO22
RO31 - South Romania region	RO31
RO32 - Bucharest-Ilfov	RO32
RO41 - South West Romania region	RO41
RO42 - West Romania region	RO42
SE11 - Stockholm	SE11
SE12 - East Middle Sweden	SE12
SE21 - Småland and the islands	SE21
SE22 - South Sweden	SE22

NUTS2 Region	Code
SE23 - West Sweden	SE23
SE31 - North Middle Sweden	SE31
SE32 - Middle Norrland	SE32
SE33 - Upper Norrland	SE33
SI01 - Eastern Slovenia	SI01
SI02 - Western Slovenia	SI02
SK01 - Bratislava Region	SK01
SK02 - Western Slovakia	SK02
SK03 - Central Slovakia	SK03
SK04 - Eastern Slovakia	SK04
UKC1 - Tees Valley and Durham	UKC1
UKC2 - Northumberland and Tyne and Wear	UKC2
UKD1 - Cumbria	UKD1
UKD2 - Cheshire	UKD2
UKD3 - Greater Manchester	UKD3
UKD4 - Lancashire	UKD4
UKD5 - Merseyside	UKD5
UKE1 - East Yorkshire and Northern Lincolnshire	UKE1
UKE2 - North Yorkshire	UKE2
UKE3 - South Yorkshire	UKE3
UKE4 - West Yorkshire	UKE4
UKF1 - Derbyshire and Nottinghamshire	UKF1
UKF2 - Leicestershire, Rutland and Northamptonshire	UKF2
UKF3 - Lincolnshire	UKF3
UKG1 - Herefordshire, Worcestershire and Warwickshire	UKG1
UKG2 - Shropshire and Staffordshire	UKG2
UKG3 - West Midlands	UKG3

NUTS2 Region	Code
UKH1 - East Anglia	UKH1
UKH2 - Bedfordshire and Hertfordshire	UKH2
UKH3 - Essex	UKH3
UKI1 - Inner London	UKI1
UKI2 - Outer London	UKI2
UKJ1 - Berkshire, Buckinghamshire and Oxfordshire	UKJ1
UKJ2 - Surrey, East and West Sussex	UKJ2
UKJ3 - Hampshire and Isle of Wight	UKJ3
UKJ4 - Kent	UKJ4
UKK1 - Gloucestershire, Wiltshire and Bristol/Bath area	UKK1
UKK2 - Dorset and Somerset	UKK2
UKK3 - Cornwall and Isles of Scilly	UKK3
UKK4 - Devon	UKK4
UKL1 - West Wales and The Valleys	UKL1
UKL2 - East Wales	UKL2
UKM2 - Eastern Scotland	UKM2
UKM3 - South Western Scotland	UKM3
UKM5 - North Eastern Scotland	UKM5
UKM6 - Highlands and Islands	UKM6
UKN0 - Northern Ireland	UKN0