

Addendum 002 – RFA Carbon and Sustainability Reporting Guidance, Part 1

Table A: Monthly reporting summary format – example data

– Version 1.2: page 20.

General Information						Sustainability Information				Carbon Information	
Batch number	Internal Batch number (optional)	Fuel type	Quantity of fuel (litres)	Biofuel Feedstock	Feedstock Origin	Standard	Env Level	Social Level	Land use on 30 Nov 2005	Carbon intensity incl LUC g CO ₂ e / MJ	Accuracy level
33001		Bioethanol	250,000	Wheat	UK	LEAF	QS	-	Cropland	61	2
33002		Bioethanol	100,000	Wheat	France	GlobalGAP	-	-	Grassland	157	2
33003		Bioethanol	250,000	Sugar beet	UK	ACCS	QS	-	Cropland	35	5
33004		Bioethanol	1,000,000	Sugar cane	Brazil	Meta-Standard	RTFO	RTFO	Cropland	25	2
33005		Bioethanol	500,000	Unknown	Unknown	Unknown	-	-	Unknown	61	0
33006		Biodiesel	1,000,000	Oilseed rape	UK	ACCS	RTFO	RTFO	Cropland	55	2
33007		Biodiesel	250,000	Oilseed rape	Unknown	Unknown	-	-	Unknown	55	2
33008		Biodiesel	500,000	Palm oil	Malaysia	RSPO	QS	QS	Cropland	47	2
33009		Biodiesel	500,000	Soy	Argentina	Basel	QS	QS	Grassland	166	2
33010		Biodiesel	250,000	UCO	UK	By-product	QS	QS	By-product	13	2
33011		Biogas	150,000	Dry manure	UK	By-product	QS	QS	By-product	36	2

QS = Qualifying Standard

RTFO = RTFO Meta-standard

Table 1: Illustrative monthly reporting requirement for Carbon and Sustainability information - example data.

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General Information						Sustainability Information				Carbon Information	
Batch number	Internal Batch number (optional)	Fuel type	Quantity of fuel (litres)	Biofuel Feedstock	Feedstock Origin	Standard	Env Level	Social Level	Land use on 30 Nov 2005	Carbon intensity incl LUC g CO ₂ e / MJ	Accuracy level
33001		Bioethanol	250,000	Wheat	UK	LEAF	QS	-	Cropland	61	2
33002		Bioethanol	100,000	Wheat	France	GlobalGAP	-	-	Grassland	157	2
33003		Bioethanol	250,000	Sugar beet	UK	ACCS	QS	-	Cropland	35	5
33004		Bioethanol	1,000,000	Sugar cane	Brazil	Meta-Standard	RTFO	RTFO	Cropland	25	2
33005		Bioethanol	500,000	Unknown	Unknown	Unknown	-	-	Unknown	61	0
33006		Biodiesel	1,000,000	Oilseed rape	UK	ACCS	RTFO	RTFO	Cropland	55	2
33007		Biodiesel	250,000	Oilseed rape	Unknown	Unknown	-	-	Unknown	55	2
33008		Biodiesel	500,000	Palm oil	Malaysia	RSPO	QS	QS	Cropland	47	2
33009		Biodiesel	500,000	Soy	Argentina	Basel	QS	QS	Grassland	166	2
33010		Biodiesel	250,000	UCO	UK	By-product	QS	QS	By-product	13	2
33011		Biogas	150,000	Dry manure	UK	By-product	QS	QS	By-product	36	2

Automatic ally 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.	Country of feedstock origin See Annex J or RFA website.	See Annex A for a list of standards. See Annex J for a list of standard terms.	See section 4.3 for explanation of sustainability levels.	See Annex H for land use categories.	See Annex G for default values and Annex I for Accuracy Level.
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Reason for changes

- Minor amendments to carbon intensity figures

Table 2: Example C&S characteristics for palm oil.

– Version 1.2: page 50.

General information		Sustainability information				Carbon information	
% of total palm oil	Feedstock origin	Standard	Env Level	Social Level	Land use on 30 Nov 2005	Carbon intensity incl LUC (g CO ₂ e / MJ)	GHG saving (%)
20	Malaysia	RSPO	QS	QS	Cropland	47	46
60	Malaysia	Unknown	-	-	Unknown	47	46
20	Indonesia	Unknown	-	-	Unknown	47	46

Reason for changes

- Amended CI of palm oil from 45 to 47 therefore GHG savings amended from 48 to 46%.

Table 3: Feedstock & origin default values. Note that these figures represent worst 'common' practice and do not necessarily represent typical practice.

– Version 1.2: pages 98-103.

Fuel	Feedstock	Origin	Carbon Intensity
			grams CO ₂ e / MJ
Bioethanol	Wheat	Canada	80
		France	65
		Germany	59
		Ukraine	103
		United Kingdom	61
	Sugar beet	United Kingdom	50
	Sugar cane	Brazil	25
		Mozambique	30
		Pakistan	115

Fuel	Feedstock	Origin	Carbon Intensity
			grams CO _{2e} / MJ
	Molasses	South Africa	113
		Pakistan	77
		South Africa	88
		United Kingdom	40
	Corn	France	49
		United States of America	108
	Biodiesel (Methyl Ester)	Oilseed rape	Australia
Canada			56
Finland			54
France			46
Germany			48
Poland			45
Ukraine			60
United Kingdom			55
United States of America			93
Soy		Argentina	48
		Brazil	78
		Canada	54

Fuel	Feedstock	Origin	Carbon Intensity
			grams CO _{2e} / MJ
		United States of America	58
		Palm	Malaysia
		Indonesia	47
	Used cooking oil	United Kingdom	13
	Tallow	Denmark	14
		United Kingdom	13
		United States of America	17
	Biodiesel (Hydrotreated vegetable oil)	Oilseed rape	Australia
Canada			62
Finland			58
France			50
Germany			52
Poland			48
Ukraine			66
United Kingdom			61
Soy		Argentina	52
		Brazil	86
		United States of America	64

Fuel	Feedstock	Origin	Carbon Intensity
			grams CO _{2e} / MJ
	Palm	Indonesia	51
		Malaysia	51
Biomethane	Municipal Solid Waste	United Kingdom	36
	Manure	United Kingdom	36
ETBE – refinery isobutene	Wheat	Canada	73
		France	68
		Germany	66
		Ukraine	81
		United Kingdom	66
	Sugar beet	United Kingdom	63
	Molasses	Pakistan	72
		South Africa	76
		United Kingdom	59
	Sugar cane	Brazil	55
		Mozambique	56
		Pakistan	85
		South Africa	84
	Corn	France	63

Fuel	Feedstock	Origin	Carbon Intensity
			grams CO _{2e} / MJ
		United States of America	82
ETBE – imported isobutene	Wheat	Canada	86
		France	81
		Germany	79
		Ukraine	94
		United Kingdom	80
	Sugar beet	United Kingdom	77
	Molasses	Pakistan	86
		South Africa	89
		United Kingdom	73
	Sugar cane	Brazil	68
		Mozambique	70
		Pakistan	98
		South Africa	97
	Corn	France	76
		United States of America	96

Reason for changes

- Addition of a new OSR to biodiesel ME fuel chain for feedstock from the USA, and soy to biodiesel ME fuel chain for feedstock from Canada.

Table 46: Default values, including the impact of land use change (grams CO_{2e} / MJ biofuel).

- Version 1.2: pages 106-109.

Fuel	Feedstock	Origin	Land converted from:			
			Cropland	Forestland	Grassland	
Bioethanol	Wheat	Canada	80	1033	192	
		France	65	394	157	
		Germany	59	424	181	
		UK	64	505	176	
		Ukraine	103	988	398	
	Sugar beet	UK	50	281	110	
	Sugar cane	Brazil	25	238	99	
		Mozambique	30	223	57	
		Pakistan	115	302	153	
		South Africa	113	331	122	
	Removal of molasses					
	Corn	France	49	291	117	
		USA	108	337	135	
Biodiesel (Methyl Ester)	Oilseed rape	Australia	71	1217	171	
		Canada	56	746	138	
		Finland	54	738	373	
		France	46	382	139	
		Germany	48	409	168	
		Poland	45	568	220	
		UK	55	583	192	
		Ukraine	60	1012	377	

Fuel	Feedstock	Origin	Land converted from:		
			Cropland	Forestland	Grassland
	Soy	USA	93	738	168
		Argentina	48	1051	166
		Brazil	78	2261	668
		Canada	57	1170	188
		USA	58	1038	173
	Palm	Indonesia	47	258	162
		Malaysia	47	267	100
HVO biodiesel	Oilseed rape	Australia	79	1361	190
		Canada	62	835	153
		Finland	58	824	415
		France	50	426	155
		Germany	52	457	187
		Poland	48	634	243
		UK	61	652	214
		Ukraine	66	1133	421
	Soy	Argentina	52	1176	184
		Brazil	86	2531	746
		USA	64	1161	193
	Palm	Indonesia	51	287	180
		Malaysia	51	298	111
	BioETBE (any source)	Wheat	Canada	73	390
France			68	178	98
Germany			66	187	106
UK			66	214	105

Fuel	Feedstock	Origin	Land converted from:		
			Cropland	Forestland	Grassland
		Ukraine	81	375	179
	Sugar beet	UK	63	140	83
	Sugar cane	Brazil	55	126	79
		Mozambique	56	120	65
		Pakistan	85	147	97
		South Africa	84	157	87
	Corn	France	63	143	85
		USA	82	158	91

Reason for changes

- US oilseed rape and Canadian soy were added as new fuel chains.
- The remaining changes made so that the value shows the total carbon intensity (i.e. including land-use change impacts and fuel chain emissions), and also removes any inconsistencies between the Guidance and the Carbon Calculator due to different rounding approaches.

Table 5: Standard terms for reporting the renewable fuel type in C&S reports

– Version 1.2: page 116.

Full Name	Standard term for report
Biodiesel	D589
Bioethanol*	P595
Biogas	G591

Reason for changes

- Fuel type codes changed from abbreviation to HMRC tax codes to be consistent with ROS.
- Biomethane renamed to Biogas to be consistent with ROS.

Table 6: Selection of standard terms for feedstock origin

– Version 1.2: page 116.

Country	ISO Country Code
ARGENTINA	ARG
AUSTRALIA	AUS
BELGIUM	BEL
BRAZIL	BRA
CANADA	CAN
DENMARK	DEN
FINLAND	FIN
FRANCE	FRA
GERMANY	DEU
INDIA	IND
INDONESIA	IDN
IRELAND	IRL
MALAYSIA	MYS
MOZAMBIQUE	MOZ
NETHERLANDS	NLD
NIGERIA	NGR
PAKISTAN	PAK
POLAND	POL
PORTUGAL	PRT
ROMANIA	ROU
RUSSIAN FEDERATION	RUS
SOUTH AFRICA	ZAF
SPAIN	ESP
UKRAINE	UKR
UNITED KINGDOM	GBR
UNITED STATES	USA
UNKNOWN	U/K

Reason for changes

- Country names added

Table 7: Standard terms for feedstock type

– Version 1.2: page 117.

Feedstock Name	Code
Coconut	COCO
Oilseed rape	OSR
Soy	SOY
Palm	PALM
UCO	UCO
Tallow	TALL
Sugar cane	SCANE
Sugar beet	SBEET
Sulphite	SULI
Sunflower	SUN
Wheat	WHEAT
Corn	CORN
Unknown	U/K
Molasses	MOL
Municipal Solid Waste	MSW
Manure	MANURE
Cheese (By-product)	CHEESE

Reason for changes

- Feedstocks added
- Abreviation changes

Table 8: Standard terms for feedstock standard

– Version 1.2: page 118.

Standard	Code
Assured Combinable Crops Scheme	ACCS
Basel criteria for soy	Basel
By-product	BYPRO
Fediol	FED
Forest Stewardship Council	FSC
Genesis Crops Module	GEN
GlobalGAP	GGAP
International Federation of Organic Agriculture Movements	IFOAM
Linking Environment And Farming Marque	LEAF
None – feedstock not certified	None
ProTerra	PROT
Qualität und Sicherheit (German Standard)	QUS
RTFO Sustainable Biofuel Meta-Standard	Meta
Roundtable on Sustainable Palm Oil	RSPO
Roundtable on Responsible Soy	RTRS
Social Accountability 8000	SA8000
Scottish Quality Cereals	SQC
Sustainable Agriculture Network/Rainforest Alliance	SANRA
Unknown	U/K

Reason for changes

- Standard renamed on ROS to provide further clarification, abbreviation corrected to BYPRO, RTRS added.

Table 9: Standard terms for land use on 30 November 2005

– Version 1.2: page 118.

Land Use	Code
Cropland	Crop
Unknown	U/K

By-product	BYPRO
Forest land	FORST
Grassland - ag use	GRAG
Grassland - non-ag use	GRNAG

Reason for changes

- Abbreviation corrected.